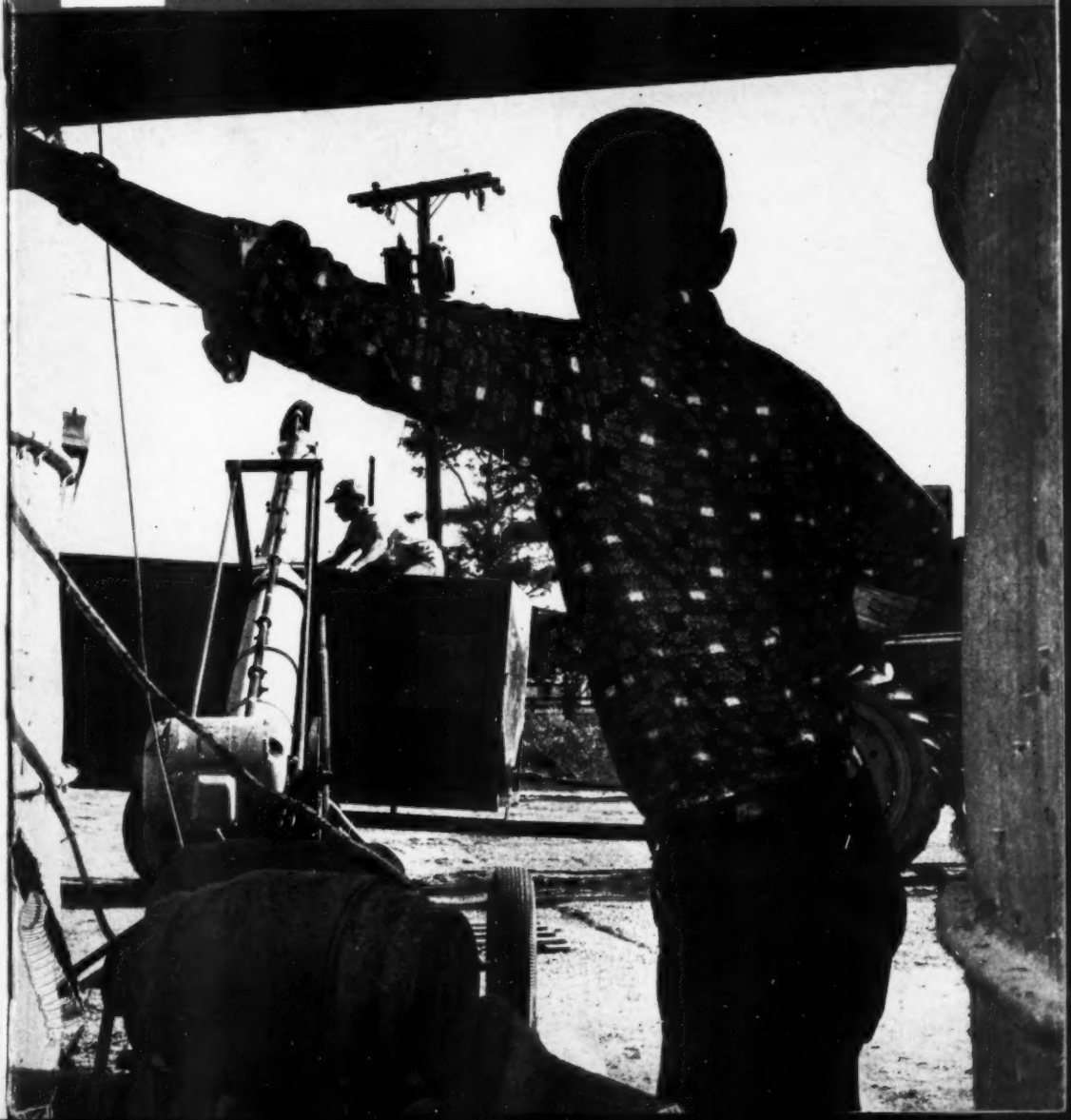
JUNE 1961

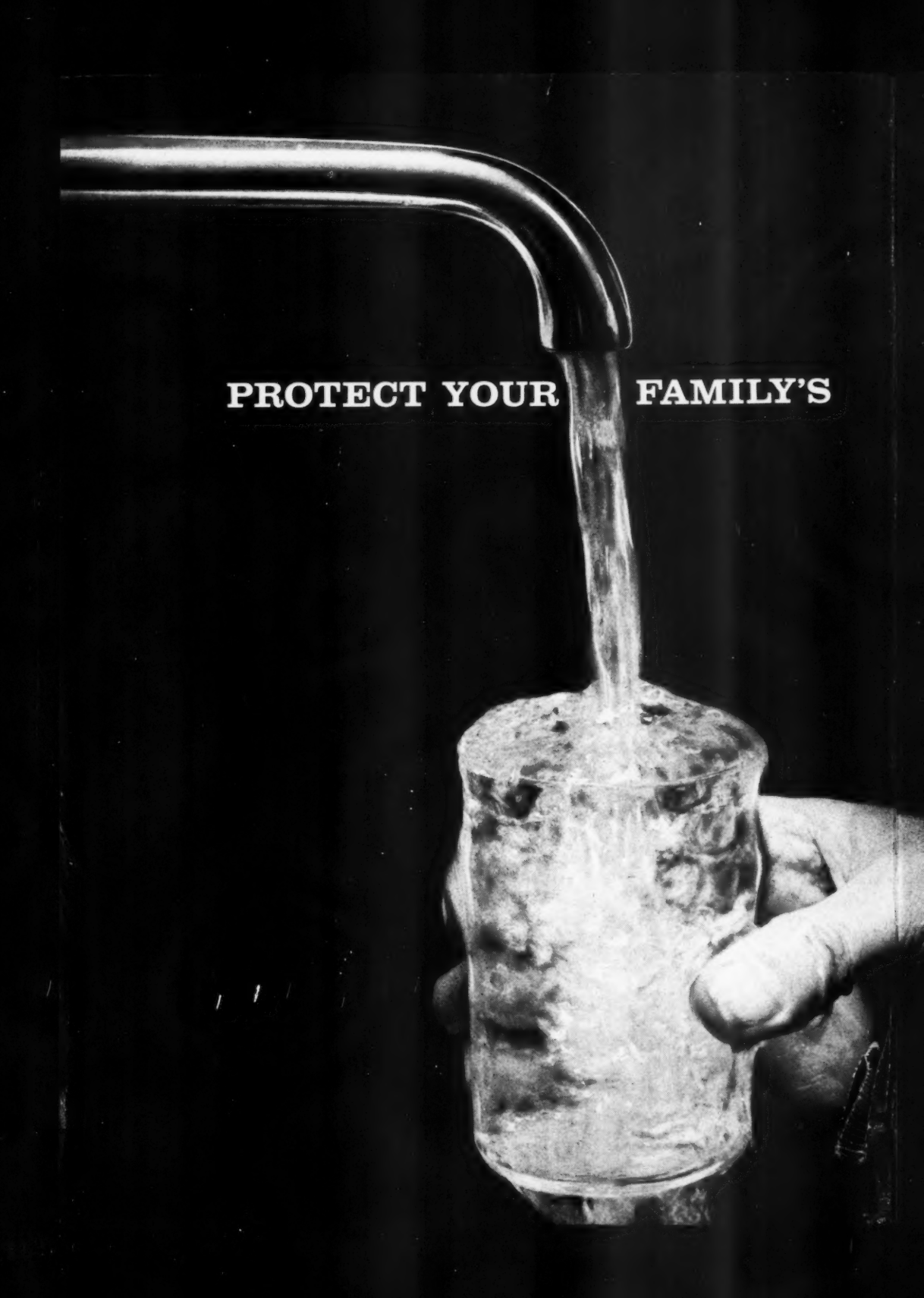
EOF electricity on the farm

SOUTHEAST EDITION

JUN 23 1961

No lifting here—augers move grain around this on-farm drying installation. See p. 12




PROTECT YOUR FAMILY'S

HEALTH WITH PURE WATER

Fairbanks Morse Announces A New WATER PURITY SYSTEM To Give You Fresh Sparkling Water From *Any* Source!

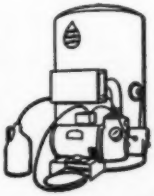
Your family's health is too important to take chances, and there's no need to, with our new WATER PURITY SYSTEM. This system completely purifies water. It automatically chlorinates, then dechlorinates and filters water from any source —water well, lake, pond or cistern. In this filtering process, all taste and smell are removed . . . . even the sulphur and iron tastes and stains that make water so unpalatable and laundry such a problem. The result is water completely free from contamination or unpleasant taste of any kind . . . pure, clean, refreshing water.

The Fairbanks-Morse WATER PURITY SYSTEM eliminates worry about seepage from barns or septic tanks. And the entire unit takes up no more room than a water heater. In the purchase of vital water purification equipment it pays to buy the best . . . and Fairbanks Morse *is* the best.

See your Fairbanks-Morse dealer today. He is equipped to analyze your water samples . . . to help you select the proper type of home water system for your specific needs from our complete line of Jet, Submersible and "Packaged" units for shallow, medium or deep-well pumping.

And remember—your F-M dealer services every WATER PURITY SYSTEM he sells. Ask him about financing.

FAIRBANKS MORSE
A MAJOR INDUSTRIAL COMPONENT OF
FAIRBANKS WHITNEY



"Golden Opportunity Days" Are Here! Never Before So Many Useful Range Features At So Low A Price . . . With The Most Useful One Of All . . .

Kelvinator Ends Oven Cleaning Drudgery Forever!

Kelvinator Electric Ranges Available in Both 30" and 40" Sizes

30"size, Model KR-35 above, has full-width oven and storage drawer, 40" size, Model KR-45, features full-size oven with storage compartment and drawer.

No Messy Scouring, Scraping or Scrubbing!

This isn't just "easier" oven cleaning . . . it's no oven cleaning drudgery at all!

You don't pull the Kelvinator oven apart, lift off the door or climb inside to clean it. Instead, Throw-Away Aluminum Oven Linings catch spatters and spill-overs to eliminate all scouring, scraping and scrubbing.

When linings become soiled, you just whisk them out, slip in new ones and presto, a clean oven! For replacements, you use standard 18"-wide foil available at stores everywhere!

ONLY KELVINATOR GIVES YOU ALL THESE HIGH-PRICED RANGE FEATURES FOR $30 TO $50 LESS THAN YOU'D EXPECT TO PAY!

- **AUTOMATIC OVEN TIMER AND CLOCK** starts and stops oven automatically!
- **MINUTE MINDER** sets for one to 60 minutes, rings when time is up!
- **INFINITE HEAT CONTROL** on right front unit dials any temperature!
- **EXCLUSIVE "EVEN-HEAT-FLOW" OVEN** has Automatic Top Oven Unit!
- **ADJUSTABLE-HEAT, ONE-POSITION BROILER** eliminates raising and lowering of grille!
- **TIMED APPLIANCE OUTLET** for automatic or regular use!
- **FINGER-WIDE PUSH-BUTTON CONTROLS** for three surface units!
- **REMOVABLE ALUMINUM DRIP PANS** for each surface unit!

How Can Kelvinator Bring You So Much Value?

You get wonderful work-savers like this from Kelvinator because, unlike others, it doesn't make costly annual model changes . . . mere "change for change's sake." Instead, its *Constant Basic Improvement* program brings you the newest advances just as soon as they are tested and approved, giving you plus value!

SEE THESE FLAMELESS ***Kelvinator*** RANGES TODAY!

CONTENTS

Keep Pigs Warm, Clean and Dry 6
Be Sure of Your Water Source 8
Flip Switches by Remote Control 10
Crop-Drying System 12
Automatic Bin Unloader 14
Mash, Pellets or Crumbles? 15
Trench-Silo Unloaders 16
New Light Shed on Plant Growth 18
Speed Peaches to Market 28
Farm Fire Detection System 30
Molasses Blender for Dairy Feed 32
Cows Like Moistened Feed 34

the farm home .....

Small Helpers—Big Results 20
Portable Dishwashers 24
Lighting Your Sewing Center 27

regular features .....

Duffy's Cavern 19
Patterns 26
Research Notes 33

SOUTHEAST EDITION

electricity on the farm

JUNE 1961
VOL. 34, NO. 5

A Reuben H. Donnelley Publication

HUGH J. HANSEN, *Editorial Director*
ALBERT MORRIS, JR., *Southeast Editor*
ROBERT NICHOLS, *Southwest Editor*
RUTH GAFFNEY, *Home Editor*
A. J. RADWIN, *Assistant to the Editor*
R. A. NELSON, *Presentation Editor*

K. H. GORHAM, *Publisher*
C. J. SCHWARTZ, *General Sales Mgr.*
G. B. PARKER, *Midwest Sales Mgr.*

Published monthly except combination issues January-February and July-August by Magazine Publishing Division, The Reuben H. Donnelley Corp., 466 Lexington Ave., New York 17, N. Y. Edward B. Wintersteen, executive manager; John Mileham, division controller; Thomas J. Hanly, division business manager.

Curtiss E. Frank, Chairman of the Board; Hamilton B. Mitchell, President; Edward A. O'Rorke, Vice President; Fred C. Ash, Secretary-Treasurer and General Counsel; Karl G. Clement, Controller.

Branch Offices—59 E. Van Buren St., Chicago 5, Ill.; Fidelity Union Life Bldg., Dallas 1, Tex.; 2535 Layton Drive, Lithonia, Ga.

Copyrighted 1961 by the Reuben H. Donnelley Corp. Not to be reprinted without permission. Title registered in U.S. Patent Office.

Subscription rates: $1.25 per year; $2.00 for 2 years; $3.00 for 4 years. 15¢ per copy. Bulk rates on request. Accepted as controlled circulation publication at Chicago, Illinois.

POSTMASTER: Send changes of address (Form 3579) to Electricity on the Farm, 466 Lexington Ave., New York 17, N. Y.

OUR NEW PUBLISHER

Karl H. Gorham, the new Publisher of ELECTRICITY ON THE FARM, has been handling the business side of the magazine since its founding in July, 1927. During these 34 years, Karl has seen and been a part of tremendous growth in both farm electrification and ELECTRICITY ON THE FARM. Farm electrification was in its infancy in 1927. EOF was begun, with an initial circulation of 10,000, to fill the need for a magazine to keep farmers informed of the many farm uses for electricity other than lighting. Today, EOF reaches over 800,000 farmers and farm leaders monthly. A graduate of Union College, Schenectady, N. Y., Karl began his career with General Electric Company in Schenectady before coming to EOF. A member of the American Society of Agricultural Engineers, he is very active in the Society's North Atlantic Section, having been Section secretary-treasurer four terms and vice-chairman two terms. Karl is also a member of several advertising and sales organizations.

EDITORIAL DIRECTOR

Hugh J. Hansen has been promoted to Editorial Director of ELECTRICITY ON THE FARM. An agricultural engineering graduate of North Dakota State University, Hugh served on the agricultural engineering staff of Purdue University after receiving his M. S. degree from Cornell University. He joined EOF as associate editor in 1955, and became editor a year later. Hugh is very active in the American Society of Agricultural Engineers. He is presently chairman of the Society's Electric Power & Processing Division and the committee on Animal Shelter Ventilation. He is president of the Farmstead Council, an inter-industry group whose purpose it is to stimulate progress in mechanization of farm operations from post-harvest to pre-market. He is also active in a number of other agricultural and engineering organizations, among them the American Agricultural Editors Association and the American Association for Engineering Education.

AVOID DRAFTS!

Here's a farrowing house designed...

to Keep Pigs Warm, Clean and Dry

By ALBERT MORRIS

Finding the best way to raise more pigs per litter is a problem that swine producers have wrestled with for years. Dr. R. F. Sewell, professor of animal husbandry at the University of Georgia, is using a farrowing house and system that has given unusually good results.

It is essential for the health and growth of newborn pigs, says Dr. Sewell, that they be kept clean, warm and dry. Farmers who use heat lamps or underfloor brooding systems may still have trouble if their housing permits drafts of cold air to blow on the pigs.

The house which he uses is a concrete-block structure with 12 farrowing pens, feed room and office space. It is designed to eliminate air drafts, and its sloping concrete floors provide two-way drainage from every pen. There are no outside runs for pigs or sows. In addition to eliminating one big source of drafts, this feature is significant because it saves the cost of concrete runs, allows the spending of this money to get a house that will permit a higher degree of environmental control.

Attic Fan for Ventilation

The aluminum roof is on a solid decking that has one thickness of felt paper. The building is ceiled. These features help maintain a lower temperature in summer. An attic fan is used for ventilation, with windows on either side opened so that air is circulated without blowing it on the hogs. This fan is operated continuously in hot weather and at short intervals during winter as is necessary to remove odors and moisture. Window screens are used to keep flies out.

In spring or fall, when the days are warm and the nights cool, Dr. Sewell operates the fan during daylight hours and turns on the heat lamps at night. This use of heat lamps helps keep pigs from going back under the sows at night and being mashed.

Dr. Sewell says he actually prefers to farrow pigs in winter. With the new house and system, he estimates conservatively that he raises two pigs more per litter than he did with conventional 7 x 7-ft. farrowing pens in an older barn. These pens were equipped with guard rails and heat lamps. There was an outside run for each pen. Air drafts in the frame structure kept the barn cold.

His aim is to place sows in the house five days ahead of their farrowing date. Once confined to a pen, the sows do not leave it until their pigs are 21 days old. Constipation is a problem that must be watched, Dr. Sewell warns. To avoid it, he reduces each sow's feed to four lbs. of complete ration daily and adds bulk to make the feed more laxative. This is particularly important just before and after farrowing, he cautions.

Add Bran to Keep Sow Regular

"We watch the droppings; add an extra handful of bran to a sow's feed if there is evidence of constipation," he observes.

Three-week-old pigs are removed to a nursery and put on pre-starter and starter rations. This practice, says Dr. Sewell, produces pigs that are heavier at eight weeks than pigs which are turned out to pasture with the sow. Brooding is continued while pigs are in the nursery, using 250-watt heat lamps like those in the farrowing house.

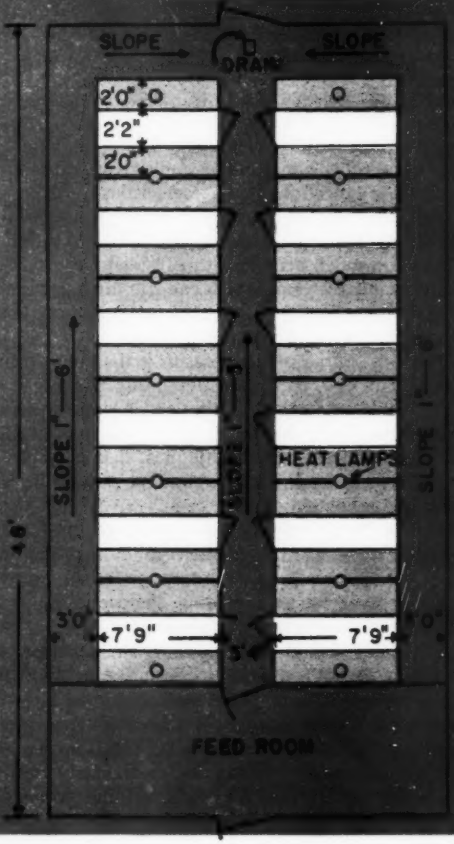
Farmers could duplicate his farrowing house and equipment for about $5,000, Dr. Sewell believes. Office space and a holding pen for pigs at one end of the house could be eliminated. Or the house might be scaled down to fit the needs of smaller producers. The 12-pen house should serve 40 to 50 sows.

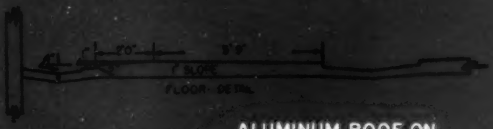
Steam-Cleans House Between Farrowings

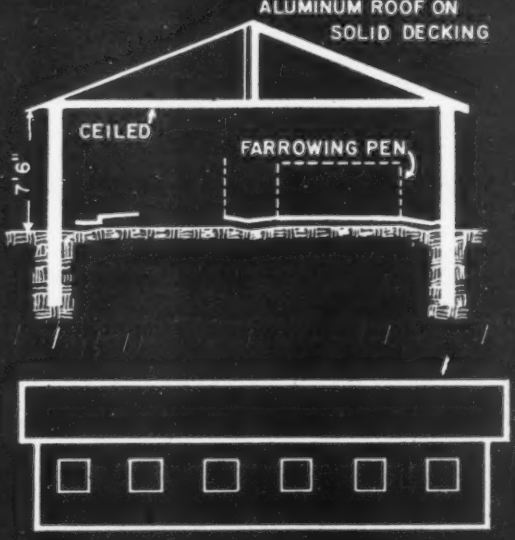
For disease control, he has the house emptied for one week between groups of sows. During this interval the house is steam-cleaned to kill parasite eggs and disease organisms. He suggests that a steam cleaner will pay for itself very quickly. Where one is not available, hot lye water will kill parasite eggs and most disease organisms. □□

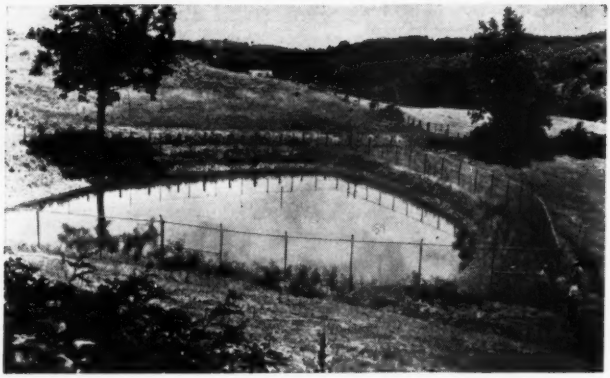
250-watt heat lamps are mounted in fixtures suspended from ceiling, located directly above partition between two pens to warm pigs on either side. Same arrangement on other side of row gives pigs two warmed areas.

◀ Concrete-block farrowing house has six metal farrowing pens on either side. Pens have two-way slope for good drainage, are cleaned from the alleys. Screens on windows provide effective fly control.

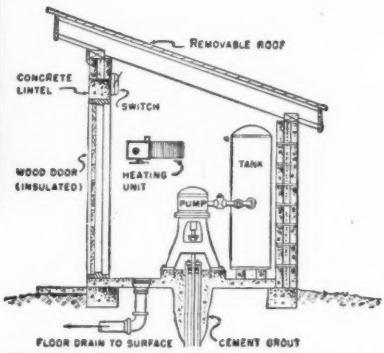








Farm ponds are often used as secondary sources of water; sometimes even as primary sources, using extensive purification equipment for safety against contamination.



Over-the-well pump installation is housed in concrete-floored, electric-heated pumphouse.

Be Sure of Your WATER SOURCE

A pump is only as good as its water source.

As efficient as water pumps are today, they will not manufacture water. Pumps carry water from its source to productive use. The source and type of your water supply are the first factors to consider when planning a sound water system for your farm.

Sources of water that may be available on a farm include ponds (natural or man-made), lakes, streams, cisterns, reservoirs, springs, or man-made wells. Regardless of source, there are three factors which should also receive consideration in the development of your farm water supply—purity, quantity, and economy.

Whether your source will produce enough water to meet your needs depends largely upon proper development. Even weak wells may produce enough water for your farm needs, if proper attention is given to well development and equipment selection and installation.

Purity of a farm water supply is very important. Generally, water coming from surface sources, such as lakes, streams, cisterns, etc., is unfit for human (and sometimes, animal) consumption, and should not be considered as a primary source without purification. Water supply systems using underground sources (springs, wells, etc.) should also be equipped with purification equipment to provide positive protection against contamination.

In any underground water supply, there will be some dissolved minerals and organic material. Excessive amounts of minerals, such as calcium, magnesium, iron, lime, sulphur, silt, dirt, etc., make water hard, unpalatable. Water softeners, filters and other conditioning equipment will eliminate these objectionable characteristics.

Economy in development of a farm water supply is, of course, a necessity. But it works both ways. Too much economy can result in an inadequate supply of water which can rob farm production and profits. Over-development can, on the other hand, waste water and money.

Primary source for most farms is the man-made well. Years ago, most wells were dug. As long as water table was close to the surface, water was obtainable. With the rapid development of well-drilling equipment and techniques, it is now possible to get a fresh, clear, abundant water supply from much greater depths.

Dug wells are rapidly passing out of existence because of their susceptibility to contamination from surface seepage. Sanitary codes in many states are very strict regarding dug wells. Follow them closely for your own protection.

Driven or drilled wells are the principal sources of water supply on most modern farms. Driven wells consist of assembled lengths of pipe, tightly connected and fitted with a screen-covered well point into which the water enters. The driven well is the quickest, most economical method of obtaining water where there is porous soil and no rock, and depth is 60 feet or less.

A soundly-constructed drilled well offers the most efficiency, water volume and protection of water purity. In a drilled well, a casing is driven down as the well is drilled and forms a wall of protection for drop pipes.

These factors should be considered in drilling a new well:

First, be sure to employ a reputable well driller who is familiar with local water tables and soil conditions. Experience and knowledge of local conditions seem to be the best bases for determination of well location and type.

Second, be sure the well site you choose is up-grade and far removed from contamination sources such as cesspools, outbuildings, etc. Check with local or state officials about rules governing placement of wells.

Third, get a well of large enough diameter. You may not need deep-well pumping equipment for a well immediately, but water levels drop, and later on, shallow well pumping may not be adequate. Four to six-inch well diameters are common in new wells today.

Fourth, after well is drilled, be sure water is checked and found to be fit for human consumption before using it.

During drilling, the well should be properly developed; that is, the well driller will remove all silt and some sands from the water-bearing formation around the well screen or intake and replace it with a layer of coarse gravel and sand. This protects well screen and pump against excessive wear and corrosion.

All newly-developed wells become somewhat contaminated during drilling. The well should be pumped clean with special cleaning equipment, and sterilized. Be sure to check local and state health regulations *before* using water from a new well.

To protect a drilled well from future contamination through surface seepage, the well should be carefully sealed. Many state health departments have codes which require sealing. A well seal is a cap over the well which places a tight seal around drop pipes.

In some installations, water-carrying pipes are terminated below frost level in a pit surrounding the well. This makes it easier to connect underground discharge pipes to the well. Several states, however, have outlawed the use of well pits because of the possibility of surface contamination. Special pitless adapter units make it possible to terminate well above ground and still connect the discharge pipe or pipes under the frost line.

A secondary source of water for today's farm is the farm pond. It is almost impossible to drive down a rural road without seeing numerous small, man-made ponds. These not only provide additional water reserves for such uses as irrigation, livestock watering and fire protection, but also provide recreational enjoyment.

Like any open supply, however, farm ponds are subject to contamination and should not be used for household purposes without extensive purification.

A properly-developed pure water source is extremely important in your plans for better health, production, sanitation and more enjoyable living. It makes sense, therefore, to take steps to assure this.

(NEXT MONTH—how to keep water system running)

MARQUETTE

MEANS MONEY-SAVING WELDING ON THE FARM

New

REDI-ARC

A.C. Arc Welder
Model 32W
25-100 Amps
8 heat settings

SOLD COMPLETE WITH CABLES, WALL RECEPTACLE, SHIELD

Save time—save money—do your own welding, cutting, brazing, soldering and spot welding jobs quickly and easily with this high-powered, low-cost A.C. welder. Extra capacity tap-type transformer produces strong, stable, surge-free arc with ideal welding characteristics. Special tap for operating Marquette Redi-Spot Gun. Unit meets REA requirements (also listed by UL and CSA), gives quick start, stop performance, on REA and all lines. Wheel-mounted. Full year guarantee. Gives superior welds with full line of Marquette electrodes.

Star-Jet

REDI-PAC

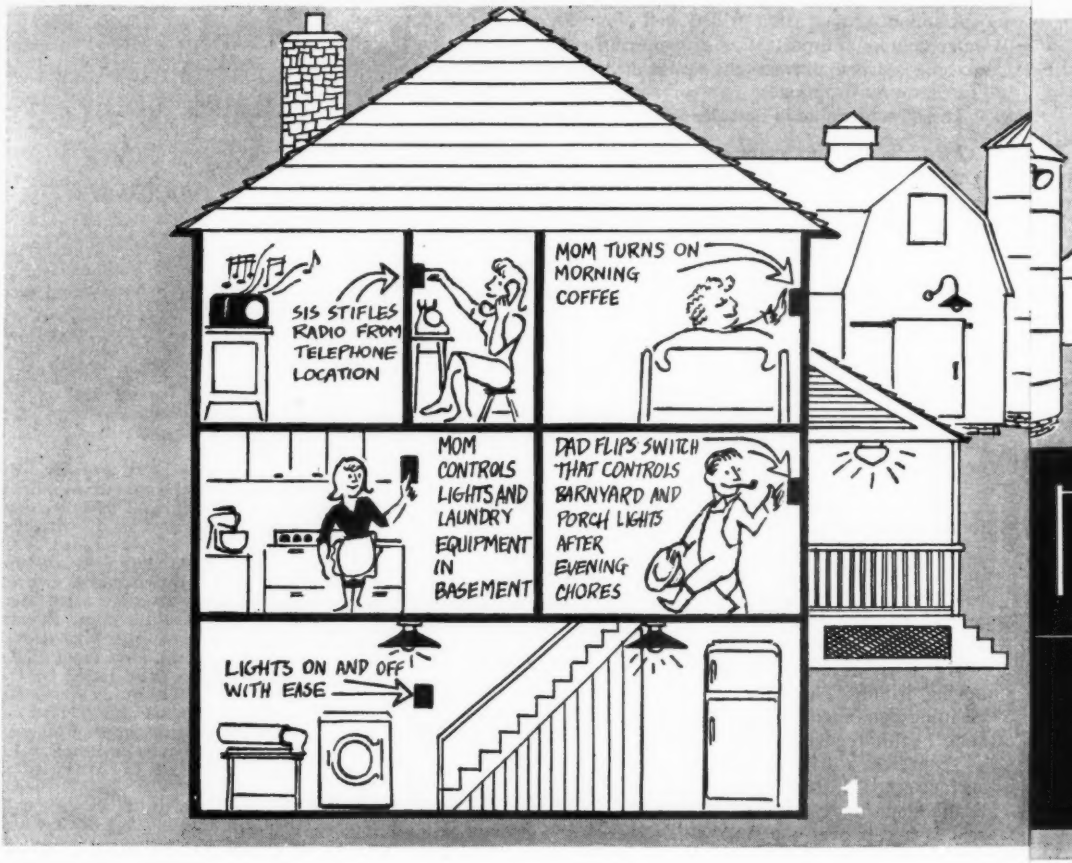
. . . today's big value in oxy-acetylene welding, cutting—sold complete in rugged tool box

Specially designed for the man who knows and prefers oxy-acetylene welding and cutting. Combines torch handle, most used welding tips, cutting assembly, top quality gauges, hose, goggles, lighter, tip cleaner—all in strong tool-box case. Priced low, handles all heavy duty welding and cutting jobs!

MARQUETTE has complete line: Get information on Marquette Arc Torch, Gas Welding Equipment, Rod Hopper, and Power King Battery Charger. Ask your implement dealer for new Farm Catalog No. 8405 or write to address below.

MARQUETTE

MARQUETTE MANUFACTURING CO.
DIVISION OF MARQUETTE CORPORATION
307 E. Hennepin Ave. • Minneapolis 14, Minn.


SIS STIFLES RADIO FROM TELEPHONE LOCATION
MOM TURNS ON MORNING COFFEE
MOM CONTROLS LIGHTS AND LAUNDRY EQUIPMENT IN BASEMENT
DAD FLIPS SWITCH THAT CONTROLS BARNYARD AND PORCH LIGHTS AFTER EVENING CHORES
LIGHTS ON AND OFF WITH EASE
1

Save steps . . . economically . . .

Flip Switches by REMOTE C

Did you ever wish, on a dark, frosty morning, that you could start your farmstead humming without ever moving from the warmth of your house? If you have yard lights and electric choring equipment, the tasks are, of course, lots easier, and you need spend much less time out in the darkness and cold.

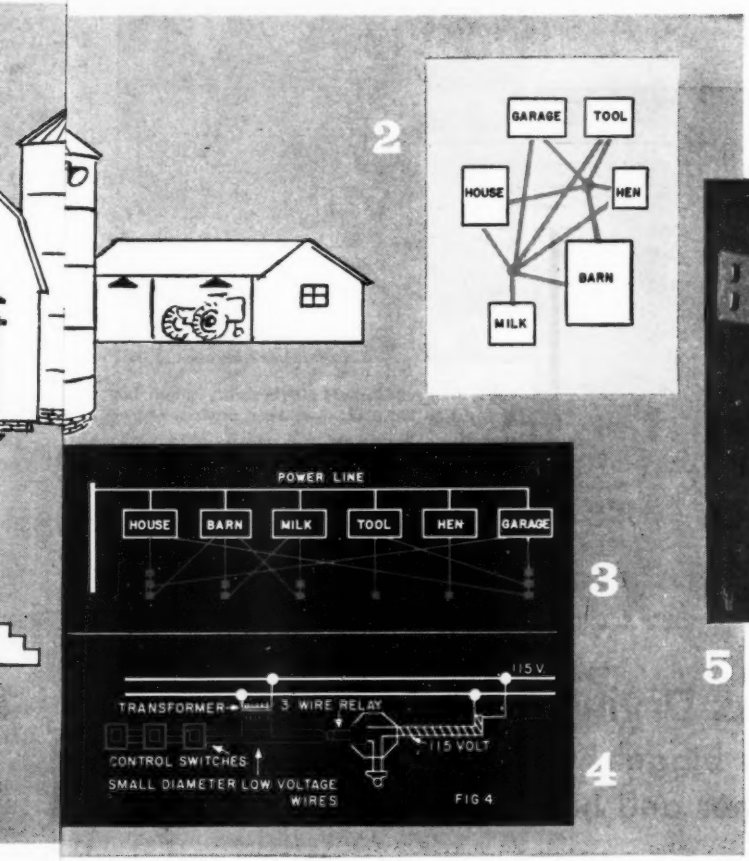
But why stop there, when you can go one step farther and actually turn on lights and other electrical equipment all around the farmstead right from the house.

Sounds like it would cost a pretty penny to put in all that extra wiring so that switches for farmstead lights and equipment could be wired up to the house, doesn't it? It would, if you used conventional wiring and switching.

But there's another way of doing it—remote control switching—which uses small-gauge wiring and low-voltage current for switching circuits. It allows on-off control of any lights and motors (up to 1 hp) from many convenient locations and control of all circuits from a central master panel.

Remote-control, low-voltage switching uses a simple transformer, similar to your doorbell transformer, to convert regular 115-volt house current to 24-volt switching current. When you flip a switch, the low voltage current energizes a relay, which is essentially a low-voltage switch that activates a switch of higher voltage. This relay sends regular 115-volt current into the lights

*Assoc. Prof., Agricultural Engineering, Oklahoma State University



1. Just a few of the things you can do with remote-control switching around the house and farmstead. In addition, motors of up to 1 hp can be started and stopped by remote-control switches placed for convenience.

2. Yard light control is easy with remote-control switching. Thin, inexpensive control wire can be strung overhead or buried in the ground from the yard-light pole to various buildings where control switches are desired.

3. Interconnection of remote-control switches at many different locations allows control of lights and equipment in different buildings from other buildings, saving lots of time and footwork.

4. How remote-control works—115 volt current is fed into a relay at lamp and also into transformer for switches. When switch is activated, low-voltage current activates relay, which in turn allows 115-volt current to flow through bulb.

5. Remote-control switches and outlets look like normal switches, but can control or be controlled from long distances away without large expense for conventional 115-volt wiring.

TE CONTROL

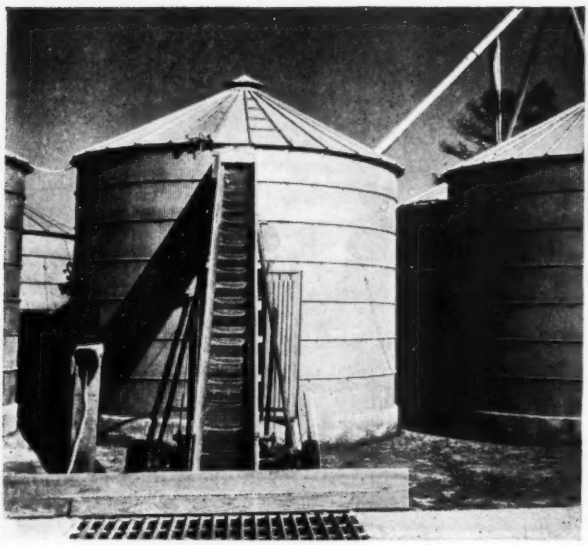
By ELMER DANIEL*

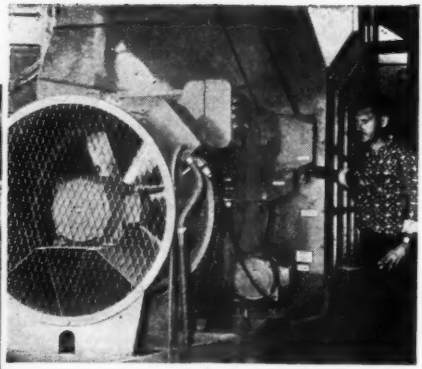
or motor you want "on."

The big advantage in low voltage switching is that small-gauge No. 20 wire can be used to the switches, rather than running heavier, more expensive wire to carry full line voltage to the switches. In addition to saving on wire cost, it saves on power loss—the more wiring that line current must flow through, the more power is wasted—at your expense.

Low-voltage wires may be extended overhead on poles, or they can be buried underground. Overhead, a bare No. 16 steel wire will usually work quite well up to a distance of 300 feet.

In a modern, all-electric home, remote switching from many locations is more economical than conventional switching. A master switch installed in any room can control any light or outlet in the entire house. With some systems, tiny pilot lights on the master switch will indicate which lights are on, and any light may be locked from the master to prevent its operation. □ □

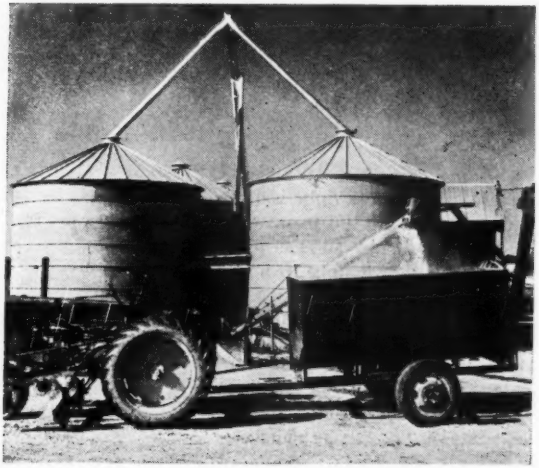




Batch drier holds about 600 bushels. 36-inch fan is driven by 15 hp motor, operates at either of two speeds.

Unloading trucks of grain is speeded by electrically-powered front-end lift and dumping into pit. Same 5 hp motor that drives conveyor belt to storage bin also operates truck lift.

With **Crop Drying System,** he picks early, gets bigger harvests, beats bad weather and hits early market



Using 8-inch auger to load trailer allows unloading from both bins at same time. 8-inch auger takes grain away as fast as two 6-inch bin-unloading augers bring it to hopper.

Commercial grain producers are rapidly accepting the view that some system of crop drying is essential for them. It is easy to understand why, when you talk with a farmer like C. S. Staples Jr. of Moyock, North Carolina.

"We can pick corn early . . . while the moisture is 28 to 30% and practically every stalk is standing . . . and get 125 bushels," he declares. Being able to start picking two to three weeks earlier consistently pays off in a bigger harvest—sometimes up to 15% more, he estimates. He also gets his crop on the market early, sometimes gaining a price advantage.

Last year, Staples picked 450 acres of corn before a hurricane

swept the area and caused huge losses on another 150 acres. Under this circumstance, his drying installation paid for itself in a single crop year. Without it, a large part of the 450 acres still would have been unpicked.

Field to Market in 24 Hours

Staples' system is geared for picking corn one day and marketing it the next. Therefore, he uses a batch drier. It holds about 600 bushels, requires 3½ hours to dry 28% corn down to 15½%. That time includes intervals for loading, cooling and unloading.

The system has a minimum of storage—one 2500-bushel bin for high-moisture corn and two 2500-bushel bins for dried grain. Picking goes on at the rate of 2200 to 2500 bushels daily, so the storage is sufficient for two days' harvest. With his highly-mechanized system, Staples figures he handles and dries corn for 3¢ a bushel.

Besides corn, he also dries soybeans, wheat, barley, oats and rye.

How Grain Is Handled

While air temperature in the drier may rise above 200°, Staples prefers to keep the temperature of corn kernels below 125°. This avoids cracking and crystallizing, which lower quality.

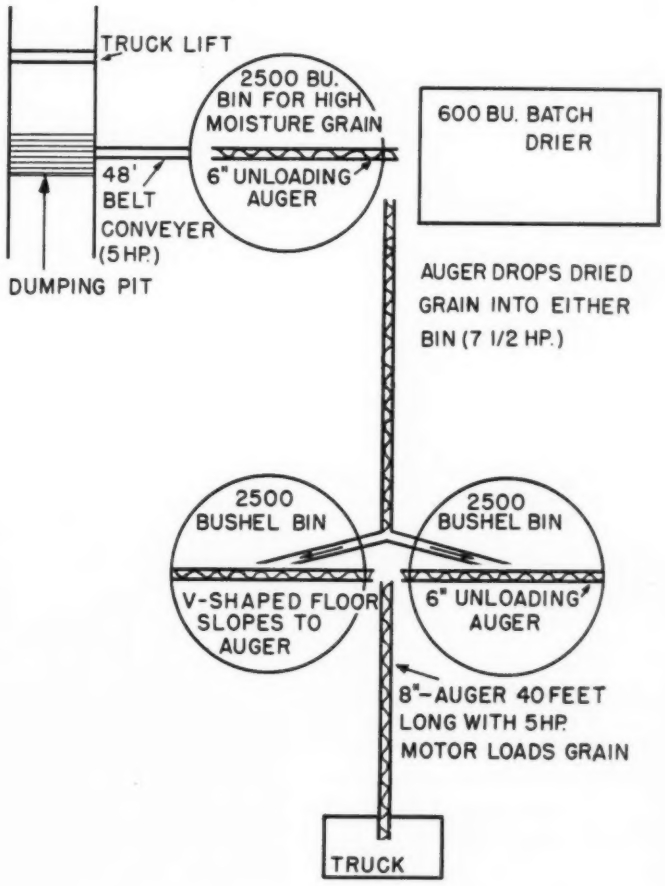
Flat-bed trucks bringing corn from the fields are unloaded into a pit by a front-end lift driven by a 5 hp electric motor. The same motor also drives a conveyor belt that carries grain from pit to storage.

Staples has used wood flashing to get V-shaped bottoms in his bins, and he has 6-inch augers at the bottom of the V for unloading. These augers operate in tubes. Openings 3 x 6 inches are cut in the tubes at 2½-ft. intervals on alternate sides of the auger.

Unload 2 Bins at Same Time

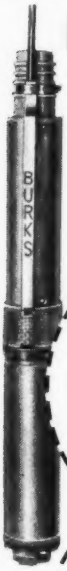
The bins for dried grain unload into the same hopper. To get the grain from this point into trucks Staples uses an 8-inch auger that is 40 feet long. He says it moves the grain as fast as the two 6-inch bin-unloading augers can bring it to the hopper.

From individual bins with fans for natural-air drying up to units like Staples', there are crop-drying systems available to fit the needs of every grain producer. □□


TRUCK LIFT
2500 BU. BIN FOR HIGH MOISTURE GRAIN
600 BU. BATCH DRIER
48' BELT CONVEYER (5 HP.)
6" UNLOADING AUGER
DUMPING PIT
AUGER DROPS DRIED GRAIN INTO EITHER BIN (7 1/2 HP.)
2500 BUSHEL BIN
2500 BUSHEL BIN
V-SHAPED FLOOR SLOPES TO AUGER
6" UNLOADING AUGER
8"–AUGER 40 FEET LONG WITH 5 HP. MOTOR LOADS GRAIN
TRUCK

What a Combination!

No Submersible Pump on the Market Can Match It.



It's the dependable, high-capacity combination of . . .

"Control Flow"
Stage Design
(positively will never overload motor)

AND

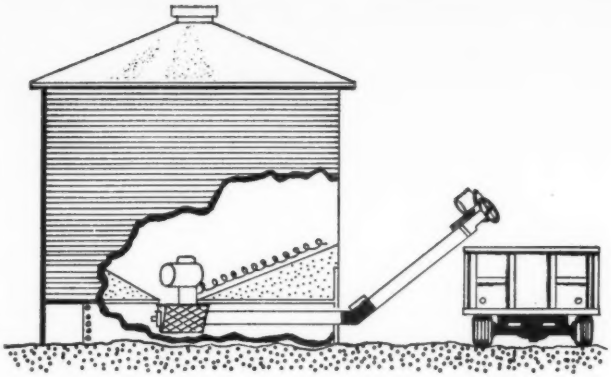
16 Spline Stainless Steel Pump Shaft
(produces an amazing driving force efficiency of 98%)

FOUND ONLY IN
BURKS
Hydro Sub Submersibles

These and the other desirable features of this new submersible pump are a result of BURKS' 47 years of building quality into pumps and water systems for farm, home, and industry.

For a quiet, trouble-free water system with the right capacity . . . at the right price . . . see your BURKS dealer . . . about a Hydro Sub Submersible Pump.

BURKS
DECATUR PUMP CO.
2750 NELSON PARK ROAD
DECATUR, ILLINOIS



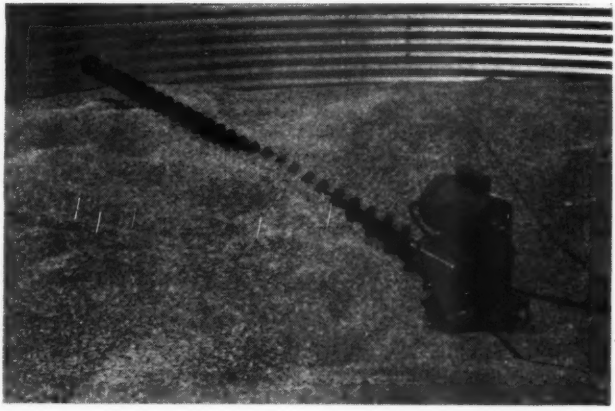
The answer to the problem of

Unloading Flat-Bottom Bins

Almost any flat-bottom grain bin can be unloaded automatically and swiftly with an auger-type bin sweep. Available to fit bins anywhere from 14 to 36 feet in diameter, the unit comes complete with dust and explosion-proof rotary switch. It can tilt to 45°, and automatically follows grain level down as grain is unloaded.

The auger carries the grain to the center of the bin, where it dumps it into the hopper of an enclosed bin-unloading auger. On certain units, the unloading auger is slanted to unload directly into truck, wagon, or mill hopper.

Depending upon its length, the bin sweep auger is powered by a ½ or ¾ hp electric motor. The 6-inch unloading auger uses anywhere from a 1½ to 3 hp motor and, at a recommended speed of 460 rpm, will move 950 bushels of grain per hour. The bin sweep can be moved from bin to bin as needed. □□



Tilt of up to 45° assures that auger will sweep bin clean, automatically.

If you buy bulk feed, should you use . . .

MASH, PELLETS or CRUMBLES?

To get the answer to this and other questions we went to John Weeks, formerly poultry specialist with the Agricultural Extension Service in Alabama, now vice president for education and research of Cosby-Hodges Milling Company.

What do you gain by buying and handling feed in bulk?

"You save around $4 per ton on the cost of feed delivered in bulk," he began. "At least $2.75 of this saving is for feed bags. Remainder of the saving is on labor required for bagging, loading and unloading. Obviously, from the farmer's viewpoint, a bulk bin lends itself to mechanical feeding."

What kind of investment is required to receive feed in bulk on the farm?

"Cost of manufactured metal bins begins at about $125 for 4-ton inside units. Outside bins are more expensive. Of course, some folks build their own bins."

What is the minimum storage capacity that should be provided for buying feed in bulk?

"Generally speaking, a farmer ought to be able to accept 6 tons or more per delivery. The distance of the haul will influence this. If he is going to have 6 tons delivered, he should have at least 8 tons storage capacity. You never want to figure on emptying the bin completely."

What are the advantages of using crumbles or pellets?

"For one thing, practically all of the dust is eliminated. They don't bridge in bins or feeders as mash has a tendency to do. We find that broilers definitely grow better on crumbles and pellets. Primarily, this appears to be a matter of greater feed intake—not more efficient feed use. We have observed in our test pens that when broilers are given their choice of the three forms of feed, small chicks eat mash, those a little older prefer crumbles, and the oldest ones choose pellets. Also, it definitely takes more time at the feed trough when birds are fed mash."

What does this mean for the producer?

"We recommend to our broiler growers that they feed mash for about the first three weeks, crumbles from the fourth to the sixth week, and pellets for the remainder of the growing period. Generally, they figure on starting with a pound of mash per bird and switch to crumbles when this is used."

What about pellets for layers?

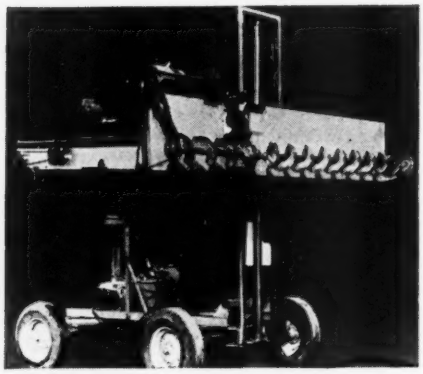
"This is a different situation. We have to be on guard against the pecking problem. Therefore, it is to the producer's advantage to keep hens busy at the feed trough for longer periods so that they do not have idle time. Mash is still favored for layers, although some crumbles are being used."

To what extent are pelleted feeds being used for cattle?

"A considerable amount of dairy feed now is fed in pelleted form. One reason for this is the new milking parlors with mechanical feeding systems. Pellets are easier to handle and cows can consume more feed in this form in the relatively shorter time that they are in the parlor. □□

Two-way saving—buying feed in bulk and feeding mechanically. ½ hp motor drives auger to deliver feed from bin to hopper; second ½ hp unit powers mechanical feeder for Sam Bush of New Port Richey, Florida. What do units like this mean in his operation? He says hand-feeding 10,000 layers would otherwise require full time of one additional employee.

Developments in Trench-Silo Unloaders



USDA RESEARCH

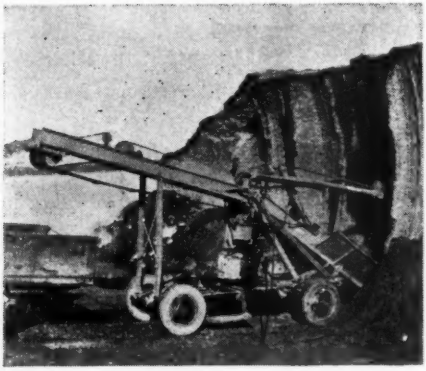
THE USDA trench silo unloader, not yet completely automatic, was designed by former USDA agricultural engineer Dean R. Vilander, with engineers from Washington State Agricultural Experiment Station, Pullman, cooperating.

Basically, it consists of a 12-ft. hydraulic lift and auger assembly mounted on a rubber-tired undercarriage. The 9-in. auger is driven by an electric motor fitted with speed reducer. The hydraulic-lift system controls height of auger and conveyor.

Mower knives attached to faces of auger cut loose the silage and pull it into revolving auger. Unit makes a vertical cut 16 in. thick, 10 ft. wide and 12 ft. deep from top to bottom in horizontal silo. As cut is made, silage is carried to conveyor by auger as auger-conveyor assembly descends. The conveyor carries silage either to a truck, or it could be used with second conveying system to take the silage directly to nearby feeding troughs.

In tests, the machine took 50 minutes to remove 6400 lbs. of silage—enough to feed 80 head of cattle 80 lbs. each. In initial tests, using a blower and pipe for conveying, the machine unloaded oat-pea silage at rate of 40 lbs. a minute. Corn silage was unloaded at rate of 125 lbs. per minute when blower-pipe conveyor was replaced by endless-chain and cross-bar type.

Development engineers are now aiming at complete automation of the silage unloader. Needed are means of advancing unloader after each cut, and for starting and stopping machinery after required quantity of silage has been removed.



MANUFACTURER DEVELOPMENT

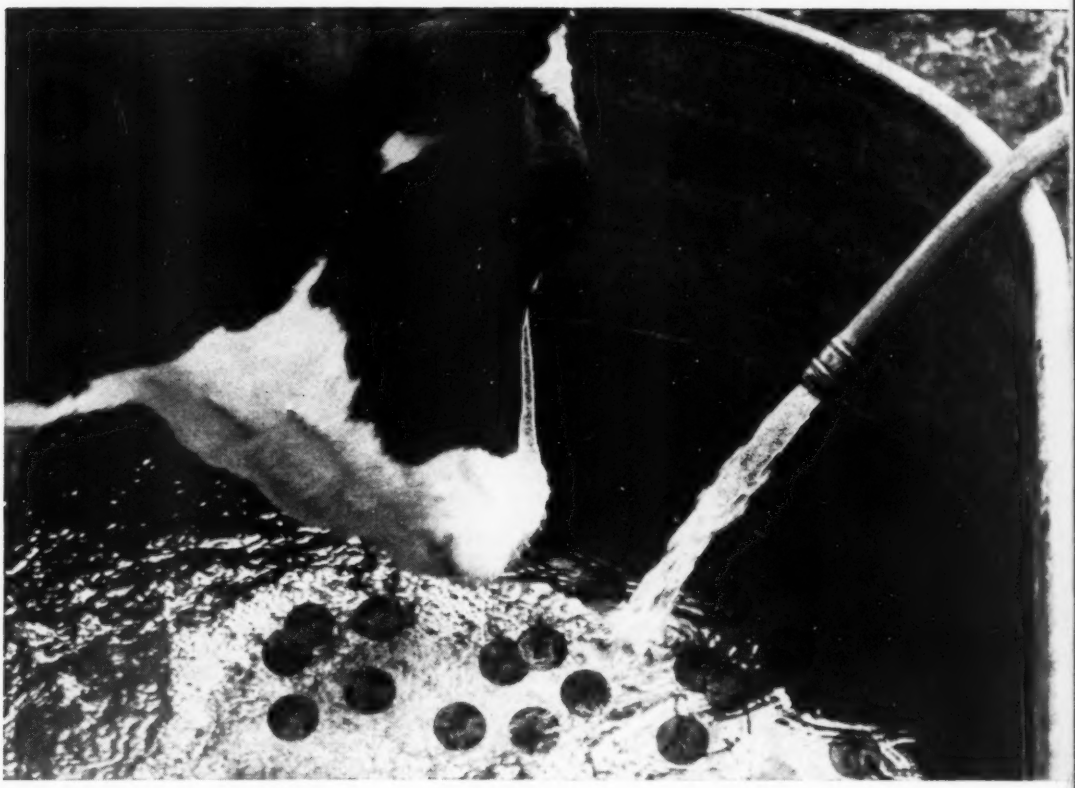
A COMMERCIALLY-AVAILABLE ensilage unloader for "trench", "horizontal", or "bunker" silos uses a reel-type rotary scoop mounted on a boom, which digs a vertical channel in the silage, moving from bottom to top. The silage falls into a conveyor drag and is conveyed either into a waiting truck or wagon, or into a hopper mounted on the unloader.

John Lebsack, Sterling, Colorado feedlot operator, uses the electric-powered unloader to remove hard-packed silage from his large trench silos. Lebsack had the manufacturer mount his unloader on a shortened truck chassis, retaining the steering mechanism for use in moving and maneuvering, and using a 10 hp electric motor for power.

The unloader is operated with two hand levers—one controls the clutch, and the other raises and lowers the boom and cutting reel. The truck chassis on which the unit is mounted is operated from a different set of controls.

A larger unloader of the same type is used at the William Seckler feedlot, also near Sterling, Colo. This unit unloads one of the largest trench silos in existence (15,000-ton capacity), and has a built-on hopper which holds more than 6000 lbs. of silage. The hopper serves as a balance scale, weighing and recording the exact amount in each load. The unloader feeds silage into the hopper, instead of a wagon or truck.

When hopper is filled with desired amount, a feed wagon is backed under it, the driver pushes a switch installed on a long boom (without leaving his seat), and load is dumped into wagon.



All the water you need—for just pennies a week!

Now you can buy a Goulds pump on easy terms . . .

Do you know a thirsty milk cow can drink as much as 25 gals. of water *a day!*

Yet, milk cows that do get all the water they want, produce more—*10 to 22 percent more!*

It's the same story with other livestock. Meat cattle "fatten up" by 10 to 20 percent more. Poultry give 8 to 10 percent more eggs.

How are you going to provide *enough* water to take advantage of such gains? Do it with a Goulds Water System *exactly fitted* to your specific needs. Goulds has all sizes, all kinds—to put plenty of water in *every* trough in your barnyard!

Afraid you can't quite see your way to it just yet? No need to put it off any longer—*you can pay for your Goulds Water System on easy terms!* Pay as little as a few dollars per month no matter what model you choose.

Don't you think *that* needs looking into? Check with your Goulds Water Systems dealer or get the name of the dealer nearest you, along with a free booklet, by sending in coupon below.

GOULDS PUMPS

Send me my free copy of your new GUIDE TO WATER SYSTEMS and name of my nearby EASY TERMS Goulds Water Systems dealer.

Name.....

County.....Route.....

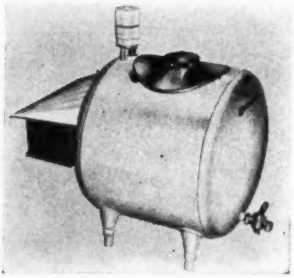
Town.....State.....

GOULDS PUMPS, INC., Dept.EF-61, Seneca Falls, N.Y.

NEW COMPACT BULK MILK TANK COSTS LESS THAN CAN EQUIPMENT

For Diversified Farmers With Small Dairy Herds

DIRECT FACTORY PRICES

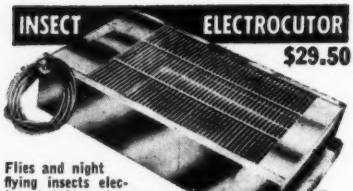


Now the price barrier is broken on farm bulk milk tanks—for the diversified farmer with a small herd. The new, small DUNCAN-COMPACT BULK MILK COOLER—made by makers of the famous ZERO Tank—gives you the labor-saving, time-saving, higher-milk-quality advantages of bulk operation. Enables you to *make the milk profit you want,* but can't get with a profit-eating can operation. Yet this DUNCAN-COMPACT *costs less than can equipment!*

SIZES START AS SMALL AS 100 GALLONS. Available with 3-A symbol. Vacuum model for present cow-to-can producers. Only 36 inches wide. Easy to install. Waterproof Urethane plastic foam insulation. Many other profit-making features. **DIRECT FACTORY PRICES AND FINANCE PLAN** make it easy to own. Make payments out of increased milk profit. Write for FREE full information, prices, sizes, capacities, details of Finance Plan—today!

DUNCAN PRODUCTS, Inc.
Dept. I-6 **Washington, Mo.**

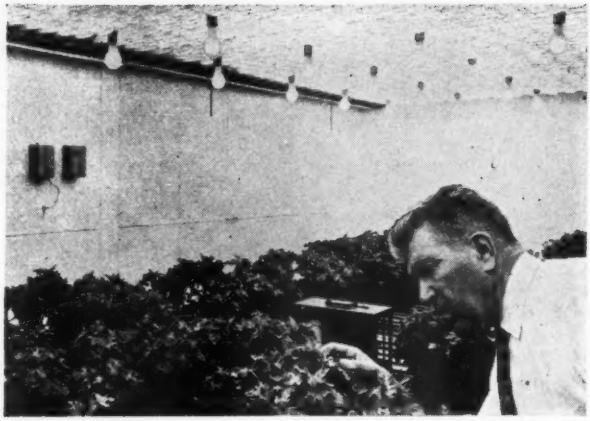
INSECT ELECTROCUTOR



$29.50

Flies and night flying insects electrocuted in vast numbers without insecticides. Flies lured by bait in drawer. Night flying insects lured by light bulb inserted. 30c per month to operate. Check or M. O. No COD's. Express collect. Parcel post damage too many. Write for free literature.

INSECT ELECTROCUTOR CO.
P. O. Box 53, E. Western Hills Station, Cincinnati 38, Ohio



Dr. Harry Borthwick examines some plants grown in new, bright-light room at the Plant Industry Station.

Light—Key to Plant Growth?

At the U. S. Dept. of Agriculture's Beltsville, Maryland research center is a brightly-lighted basement room that is helping researchers unveil the mysteries of plant growth.

The 9 x 16-ft. room offers plant growth scientists up to three times as much light as they formerly had to experiment with. In early tests, scarlet sage seedlings flowered much faster than in other plant growth rooms or greenhouses.

"We don't know how much light is needed for optimum plant growth," says USDA chief plant physiologist Harry A. Borthwick, "but we do know that plants grown in this new room are superior to those grown in our other rooms having lower light levels." Other important factors include the color of light and the length of time plants are exposed to it.

What is exciting plant physiologists today is the possibility that they now have the key to man's complete control of plant growth from seed germination through flowering and fruiting. A light-sensitive substance, determined to be two forms of a blue pigment which exists in plants in amounts of one part in a million, has been found to control plant growth responses. The two forms of the pigment, according to Dr. Borthwick, act as valves which open or close according to the kind of light they receive. Further research will be aimed at isolating, purifying and identifying the growth-triggering substances.

The period of time a plant is exposed to light has an important effect on its growth response. Lobolly pine trees, for example, grow six times as fast as normal when exposed to light 24 hours a day. On the other hand, only one ten-thousandth of a second of light causes lettuce seeds to germinate.

Of course, the day-length of a region can't be changed to fit the needs of a field crop. However, experiments in plant growth rooms have helped in the selection of the proper crops or crop variety to fit the region. □□

SODDEN THOUGHT: When a man NO longer complains about his bride's cooking, it MEANS that either SHE has learned BETTER—or HE has. . . . IMPUDENCE: the trait that enables a man SITTING in a bus to FLIRT with a woman who is STANDING. . . . TOTAL DISARMAMENT will NEVER work. The government could NEVER get the gals to STOP wearing perfume. . . . SHAVING CREAM SONG: "Nobody Knows The Stubble I've Seen." . . . We overheard the teenager just ahead of us at the bakery asking for "Policeman Cookies." "Just WHAT," queried the baker, "are POLICEMAN COOKIES?" "COP CAKES," squealed the teenager, "COP CAKES!" . . . JINGLE-JOLLY DEPT.: Travel broadens —but NOT as MUCH, As CANDY, Cake, WHIPPED CREAM, and SUCH. . . . A new national organization is reported springing up, called AAAAA. It's for drinkers who drive. . . . A SMART doctor is one who can tell you what's wrong with you, EVEN if you DON'T imbibe, smoke or HAVEN'T any teeth. . . . Husband, struggling with budget: "NOW I WISH we had SAVED money during the depression so we could LIVE through PROSPERITY!" . . . Friend of ours tells of going to a crooked butcher who had cheating scales. Says our friend: "One day I went in and didn't buy ANYTHING and it WEIGHED six pounds." . . . FLIP QUIP: A word to the WIDE is SELDOM sufficient. . . . OVERHEARD: "BEFORE she was married she played the banjo; but NOW she just PICKS on her HUSBAND." . . . First time we run across a collector of Indian relics we're gonna ask him what ever happened to Minnehaha's original tee-hee. . . . PARTING THOUGHT: NO money talks LOUDER than HUSH money when it gets its voice BACK. . . . Your pun-peddler—DUFFY

ENGINEERED FOR MODERN FARMING

Rapidayton

SUBMERSIBLE PUMPS

Depths to 1000 ft. • Capacities to 140 g.p.m. • Pressures to 120 p.s.i.

for animal-centered agriculture • irrigation • farm homes

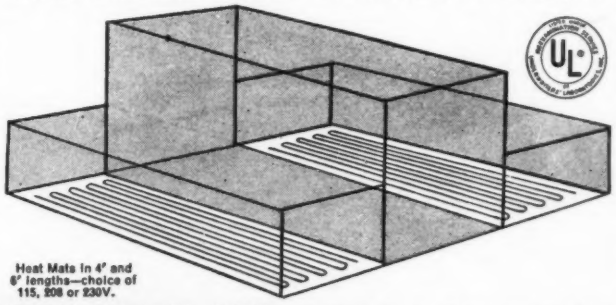
Modern, profitable farming requires *more water* in *more places* — with higher capacity and higher pressure. You can rely on Rapidayton submersible pumps, quality-built to insure that extra heavy-duty performance and 24-hour-a-day dependability so vitally essential in a farm "lifeline." Ideal for pressure tank systems; free-flow irrigation and sprinklers; livestock watering, sanitation, and waste removal; fire protection. There's a Rapidayton submersible pump for *your* need. Write for new idea-packed folder on farm applications.

Rapidayton *division*
The Tait Manufacturing Company
Farm Department No. 777, Dayton 1, Ohio

Net more pigs per winter litter with

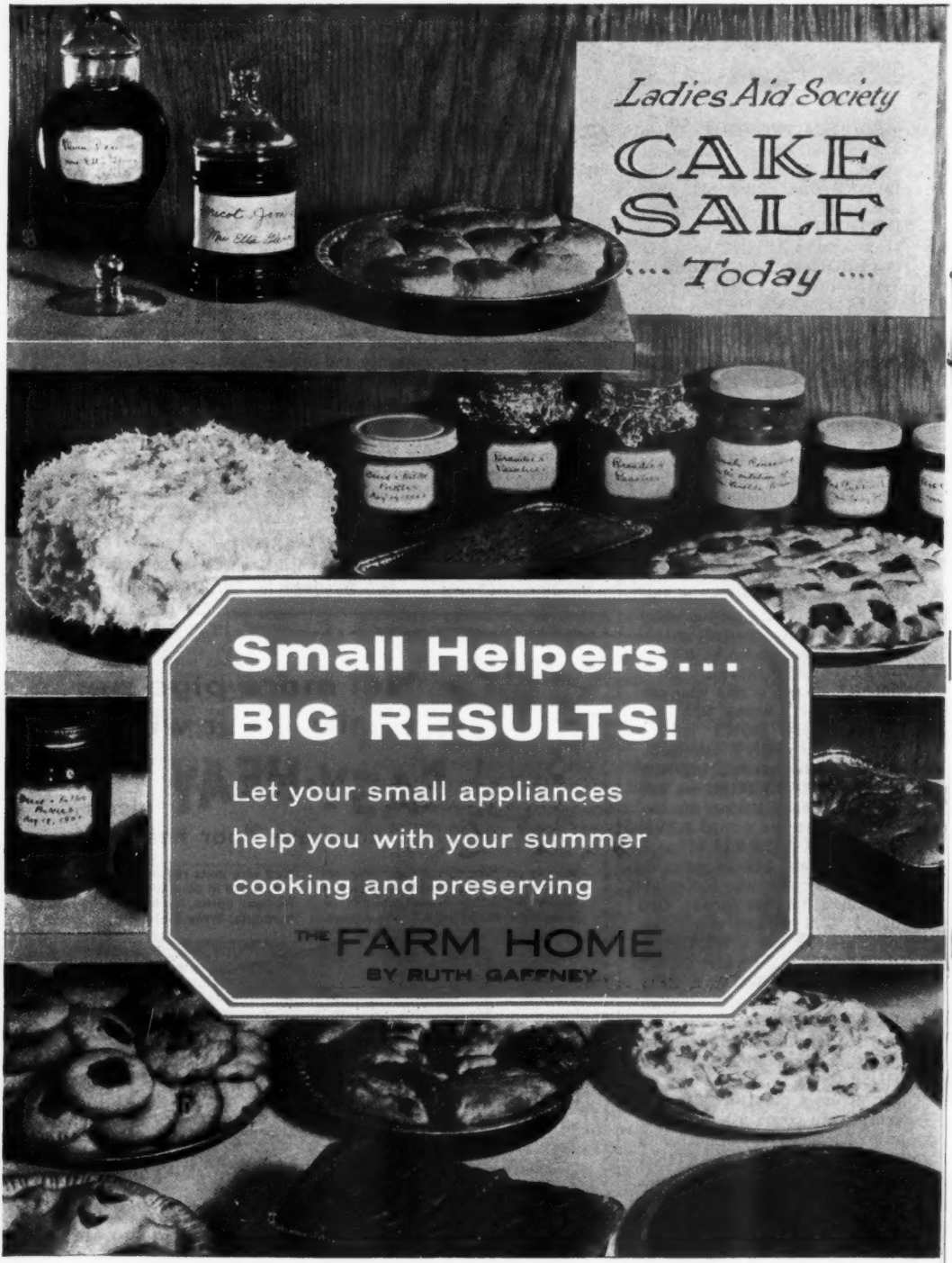
EASY-HEAT electric concrete floor heater

Now is the time to upgrade your farrowing house. Save more winter-born pigs from freezing—install economical, safe, even EASY-HEAT. Pre-assembled wire units roll out like a rug, are embedded in concrete as it is poured. No flesh burns, fire hazards, midnight burnouts. Write for full facts, layouts.



Heat Mats in 4' and 6' lengths—choice of 115, 208 or 230V.

EASY-HEAT, INC., "Electric Anti-freeze Devices"
Dept. EF, Lakeville, Indiana


Ladies Aid Society
CAKE SALE
.... Today ....
Small Helpers...
BIG RESULTS!
Let your small appliances help you with your summer cooking and preserving
THE FARM HOME
BY RUTH GAFFNEY

State fairs—Church and family picnics—Benefit cake sale —they're all as much a part of the American summer as bumblebees and fireflies. Why not pool the many portable electrical appliances owned in your group for use at the next Ladies' Day bake and see how much easier it will be. Use and take right along to the sale some of the newest aluminum foil loaf, cake, and pie pans with black bottoms to insure beautiful results. The following recipes should make a great hit.

Pears in Snow

6 canned pear halves
1 package lemon flavored gelatin
1 cup hot water
1 cup pear syrup
1 egg white
½ cup whipping cream
¾ cup flake coconut

Drain pears, reserving syrup. Dissolve gelatin in hot water. Stir in 1 cup of the pear syrup, and chill until slightly thickened. Beat egg white until stiff and whip cream until thick; then fold into the slightly thickened gelatin. Fold in half of the coconut. Spoon into a 1-quart casserole or serving dish. Sprinkle with remaining coconut and press the pear halves into top. Chill until firm. Serves 6.

Cream Layer Torte

Beat 1¼ cups egg whites with ½ cup plus 2 tablespoons sugar until they stand in firm peaks. Carefully fold in ½ pound blanched almonds, finely grated, and 2 tablespoons flour.

Line 3 nine-inch cake pans with brown paper. Spread the batter evenly in the pans and bake the cake in a very slow oven (250° F.) for 1½ hours. Turn off heat but, to keep layers hot until they are removed from pans, take from oven one at a time. Cool on racks.

Melt 4 one-ounce squares of dark chocolate and spread over cooled cake layers. Let stand in cool place until chocolate is firm. Dissolve 1 envelope gelatin in 2 tablespoons hot water and let cool slightly. Whip 3 cups heavy cream until stiff, add 1 cup sugar and gelatin, mixing carefully. Spread whipped cream filling on cake layers; cover top and sides of cake with remaining whipped cream.

Shave solid block of dark chocolate to make long curls, scatter over entire top of cake. Cover sides of cake thickly with finely grated chocolate. Sift confectioner's sugar lightly over top. Store cake in cool place until serving time. (*Please turn page*)

Small Helpers—Big Results (continued)

OUR FARM kitchens are active areas during summer months. Lots of company—additional meals—extra freezing and preserving of fruits and vegetables. Give your kitchen a decorative lift with a new idea in wallpaper *(left)*. Use one of the new wide wallpaper borders to make a frame around the window and coordinated wallpaper in blue-and-white for the rest of the room. It'll make your kitchen one of the prettiest rooms in the house!

ONE WAY to keep yourself cool this summer is by making full use of your small electrical appliances. You'll find them particularly helpful in quick canning of small quantities of fruits. For instance, your electric saucepan is ideal for making

Strawberry Jam

- 2½ cups prepared fruit (about 1¼ qts. ripe strawberries)
- 2 tablespoons water
- 3½ cups (1½ lbs.) sugar
- ½ box—1¾ oz. size—powdered fruit pectin (about 2½ tblsp.)

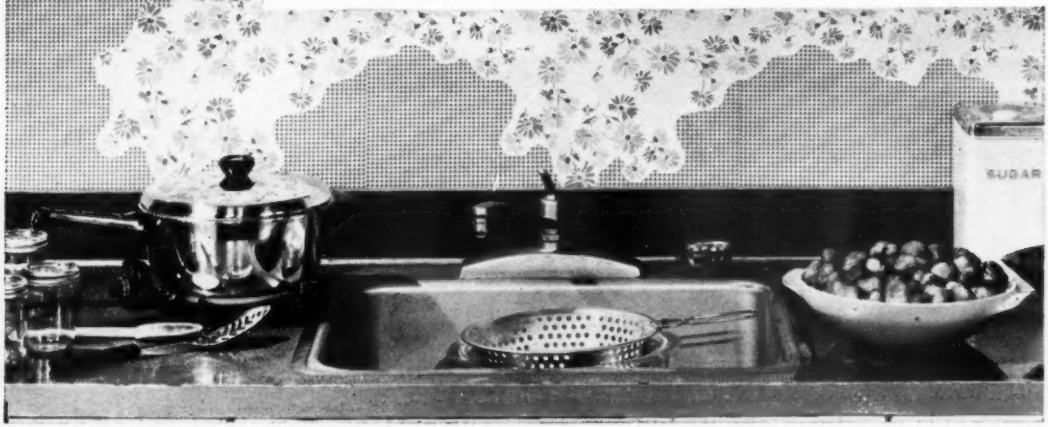
First, slice strawberries lengthwise in half. Measure 2½ cups berries into 4-quart electric saucepan. Add 2 tablespoons water and powdered fruit pectin. Turn control to "high." Stir until mixture comes to a hard rolling boil, then stir in sugar. Bring again to full rolling boil and boil one minute, stirring constantly. Turn off heat and skim off foam with metal spoon. Then stir and skim by turns for 5 minutes to cool slightly (this will prevent fruit from floating on top). Ladle quickly into two 8-oz. glasses. Cover jam at once with ⅛ inch hot paraffin.

NOW ONE of your handiest helpers gets into the preserving act—the electric blender. It not only saves your "elbow grease" but gives fine results instantly.

Apple Butter

- 5 cups prepared fruit (about 2¼ lbs. ripe tart apples and 1 lemon)
- 7½ cups (3¼ lbs.) sugar
- ½ teaspoon allspice
- 1 teaspoon cinnamon
- ½ bottle liquid fruit pectin

Prepare fruit by removing blossom and stem ends from about 2¼ pounds fully ripe tart apples and cut in quarters. Do not peel or core. Add 1½ cups water and juice of 1 medium-sized lemon.



Place in electric saucepan, turn control to "high" and bring to a boil. Simmer, covered, 10 minutes. Put small amount at a time into electric blender and blend for about 15 seconds. *To make the butter:* measure 5 cups fruit pulp into a large saucepan; add sugar and spices and mix well. Turn control on saucepan to "high," bring to full rolling boil and boil 1 minute, stirring constantly. Turn off heat at once and stir in liquid fruit pectin. Skim off foam with metal spoon. Ladle quickly into 12 medium-sized glasses and cover at once with ⅛ inch hot paraffin.

Tomato Marmalade

1 orange, unpeeled but diced
1 lemon, unpeeled and sliced
1 cup water
½ teaspoon salt
6 cups peeled, sliced tomatoes
3 cups sugar
2 sticks cinnamon
1 teaspoon whole cloves

Place orange, lemon, water, and salt in glass container of electric blender; cover and blend until fruit is finely cut, about 30 seconds. Pour mixture into electric saucepan; bring to boil and cook, covered, for 10 minutes. Add sliced tomatoes and sugar. Tie cinnamon and cloves in a cheesecloth bag and add to tomatoes. Bring to boil again and cook, uncovered, until thickened. Stir frequently; turn off heat when few drops, dropped on a cold saucer, will jell. Remove spice bag and pour immediately into sterilized glasses; seal with paraffin. Makes 5 cups.

Plum Jam

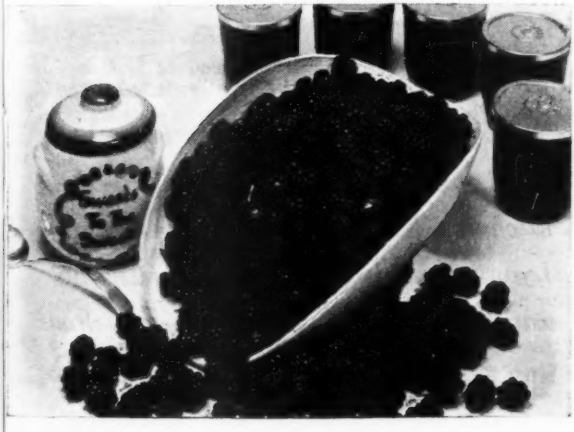
Cut fruit into quarters and remove seed. Place in electric saucepan and add 1 cup sugar for each cup of fruit. Turn control to "high" and heat to boiling point (do not add water to fruit); turn control immediately to low simmer and cook for about 2 hours. Pour into sterilized jars and seal immediately.

Take Good Care of Your Appliances

Small portable appliances render better service when given a certain amount of regular care. Store them in a dry place, preferably with some type of protective cover. You'll find many practical, inexpensive and washable covers from which to choose.

Store them only after they have been thoroughly cleaned. You'll be amply rewarded if you keep them bright and shining by giving a quick rub to the outside of the appliance to remove grease and fingermarks.

Each detachable cord should be matched up to, and stored with, the appliance to which it belongs. Probe-type cords should be handled with care because of the delicate thermostats contained within them.



PURE SPARKLING WATER

from your own well or pond! ELIMINATE IRON, SULPHUR and water-borne disease bacteria with a CD PACK® which combines: EVERCLOR automatic chlorination to kill bacteria...oxidize iron and sulphur. PLUS EVERPURE superfiltration to make water sparkling clear . . . remove chlorine, bad tastes, and odors. Used on farms everywhere—for the best water in the world! And it costs so little.

Write today for full information

EVERPURE, INC.
MANUFACTURERS
2627 West 19th Street
Chicago 8, Illinois

PLASTIC FREEZER CONTAINERS
Square Pints, $9.95; Quarts, $15.00
Per Hundred. Postpaid. Sample Pint, 25¢.
Oxboro Box 7031UU Minneapolis, Minn.

DRAINS cellars, cisterns, wash tubs; **IRRIGATES - CIRCULATES - SPRAYS** $7.95

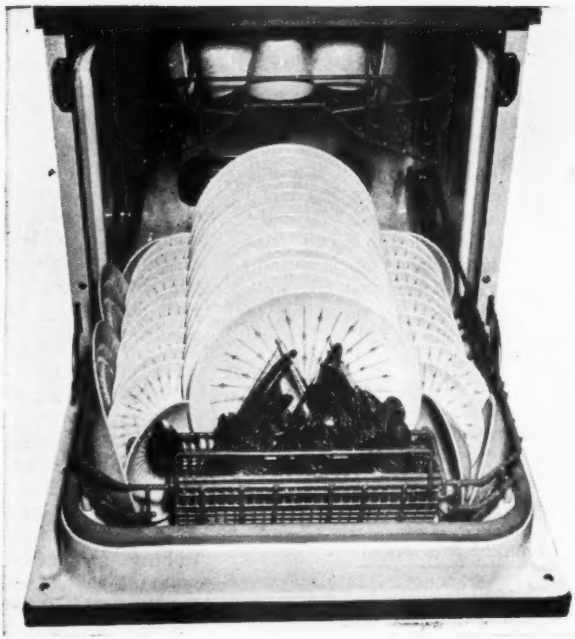
1,001 uses. Stainless shaft. Won't rust or clog! Use 1/6 HP motor or larger ¾ HP for up to 2,400 GPH: 450 GPH 80' high; or 1800 GPH from 25' well. 1" inlet; ¾" outlet. Coupling included free. **$7.95**
Heavy Duty Ball-Bearing Pump
Up to 5,200 GPH; or 3,000 GPH from 25' well. 1¼" inlet; 1" outlet. **$12.95**
Postpaid if cash with order. MONEYBACK GUARANTEE.
LABAWCO PUMPS, Belle Mead 49, New Jersey

"GARD"
ELECTRIC INSECT KILLERS
- Electrocutes flying insects
- Ideal for outdoor stands, porches and bakeries, etc.

ELECTRIC FLY TRAPS
- Eliminates fly spray
- Ideal for dairies, packing plants, farms, markets, etc.

ELECTRITE FENCE CONTROLLERS
- America's oldest electric fence company

GARDENHOUR MFG. CO.
Waynesboro, Pa.
Pat. #2,475,182



Dishwashing section in this neat portable pulls out like a drawer. Pretty enough to roll anywhere for easy loading and practical as a serving cart. Also comes with maple or plastic top.

PORTABLE DISHWASHERS

Have you always thought of an automatic electric dishwasher as something that had to be permanently built into the kitchen? Well, it's not necessarily so. If you have a dishwasher-on-wheels, you can have all of the convenience of this electrical servant without giving a thought to installation.

Generous size of this attractive portable dishwasher makes it suitable for a large family. Front-opening type has maple cutting board for a top. This unit may be built in later if kitchen is renovated.

Many kitchens in homes today do not have any provision for adding such built-in appliances as dishwashers. For this reason, and because it could be a costly undertaking, many homemakers are doing without the wonderful time-saving convenience of automatic dishwashing.

For quite awhile now we have had available all of the built-in luxury of automatic dishwashing in a compact, portable model. It is mounted on easy-rolling casters, and may be stored in any available space in or near the kitchen. When ready for use, it is simply rolled up to the sink and connected to the hot water faucet by a hose.

Newest models have many or all of the same features of the built-in type, including capacity large enough for a good-sized family. These portable models do the same time-saving job of washing, rinsing and drying the dishes—all with no attention from you.

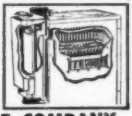
One unique advantage of this type of electric dishwasher is the fact that it can be taken with you if you have to move. This makes the portable dishwasher especially practical for young families and those who do not own their homes. It requires no plumbing or electrical wiring. A hose, recessed in the appliance, is pulled out and connected to the hot water faucet at the sink. Waste water drains through a hose into the sink bowl.

When dishwasher is in operation, by the simple push of a button, the faucet at the sink may still be used. It would be a good idea to ask whether this feature is included on the model you are considering buying.

complete package of
RANGE VERSATILITY

Monarch SINCE 1896 36 INCH
ELECTRIC COMBINATION

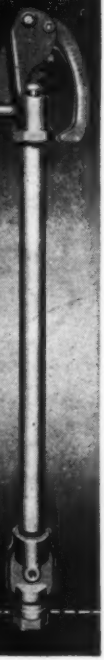
Monarch electric combination range offers new all 'round kitchen efficiency—it cooks, bakes, heats. Features include stylish mantel back, full complement of automatic controls, giant 6726.9 cu. in. oven, super speed surface unit electric section, and heater section for added warmth and cooking.



built-in coal-wood or oil heater section

MONARCH RANGE COMPANY
7061 LAKE ST., BEAVER DAM, WIS.

BUY THE HYDRANT
THAT *DEFINITELY* WILL NOT FREEZE



Vari-Flo Model F-55—¾" size. Cam-Lock Model B-56—1" size. Bury Depth — 2, 3, 4, 5 or 6 ft., depending on frost level in your area.

See your well driller, plumbing, water systems, or hardware dealer — or write us direct!

The Columbiana Pump Co.
RAILROAD STREET
COLUMBIANA, OHIO

PICK YOUR PATTERNS

4500—Easy-stepping culotte dress. Printed Pattern in Half Sizes 14½-24½. Sizes 16½ takes 5¼ yards 35-inch fabric. 35¢

9058—Cool dress, scalloped jacket. Printed Pattern in Women's Sizes 36-48. Size 36 dress, 4½ yards 35-inch fabric; jacket 1⅝ yards. 35¢

4792—Crisp casual with set-away collar, gored skirt. Printed Pattern in Half Sizes 14½-24½. Size 16½ takes 4⅜ yards 35-inch fabric. 35¢

9026—Summer suitdress to sew in cotton. Printed Pattern in Misses' Sizes 12-20; 40. Size 16 outfit takes 3⅝ yards 35-inch fabric. 35¢

4618—Scooped sundress, cardigan jacket. Printed Pattern in Half Sizes 12½-22½. Size 16½ dress 3⅛ yards 35-inch fabric; jacket 1¾ yards. 50¢

4554—Princess dress and fitted jacket. Printed Pattern in Misses' Sizes 12-20. Size 16 dress, 3⅞ yards 39-inch fabric; jacket 1¾ yards. 35¢

PATTERN 4618 is FIFTY CENTS. PATTERNS 4500, 9058, 4792, 9026, 4554 are THIRTY-FIVE CENTS each. Add 10¢ each for 1st-class mailing. Send 35¢ for full-color Catalog of Printed Dress Patterns. Cover illustration above.

Send orders (with coin) to:
ELECTRICITY ON THE FARM,
Pattern Department, P.O. Box 122,
Old Chelsea Station, New York 11, N. Y.

PART IX By A. V. KREWATCH*

Adjustable scissor-arm wall lamp has reflector that may be swivelled to put light where you want it. This type lamp must be used with other illumination in the room, such as a ceiling fixture or other normal room illumination.

Good Light for Sewing

Did you ever stop to think that incorrect light for machine or hand sewing is just as wasteful of time and energy as sewing without a pattern? Sure, a quick mending job, or sewing on a button, requires only a casual amount of light because the job isn't long enough for the eyes to tire. But, sewing with dark thread on dark cloth, crocheting, working needlepoint, or sewing for a long period of time where there is a lot of fine detail all call for plenty of light to help you see without straining your eyes.

How much light do you really need when sewing? More light than for many other tasks. A minimum of 40 foot-candles is recommended for casual sewing, and any additional that can be supplied makes the task easier. How can you get this amount of light?

** Member "Four-State Lighting Committee" consisting of representation from Agric. Extension Services of Univ. of Md., Penna. State Univ., Va. Polytechnic Inst., West Va. Univ., and Resid. Dept. of Potomac Edison Co.*

MACHINE SEWING

Standard floor lamp or double-swing arm

Position—Swing center of shade to within 18″ to the left of the needle and 12″ toward user. The lamp should be located in such a position that the under-shade brightness does not cause discomfort when looking up from sewing.

Bulb—Standard floor or double-swing arm lamp should have an 8″ or 10″ diffusion bowl and use a 50/250-watt or 100/300-watt 3-lite bulb.

Shade—Minimum of 10″ top, 10″ depth, 16″ bottom, and made of suitable material to transmit light without letting the bulb show through.

Wall lamp or pull down may be used

Position—Hang lamp so lower edge of shade is 14″ above table. Center 12″ to left of needle and 7″ behind it.

Bulb—Use one 150-watt or one R-40 White Indirect.

Shade—Be sure shade is not less than 14″ bottom diameter. Preferred shade material is parchment or fabric over parchment—white lined.

NOTE: When supplementary light for portable sewing machine is provided by a wall-mounted lamp, turning machine at right angles to wall will reduce distance from light to needle and improve sewing light.

HAND SEWING

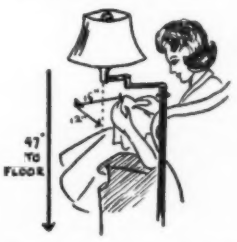
Table lamp

Position—Place lamp center 20″ or less to left of sewing for right-handed person (to right, for left-handed), and pull it forward to a point almost opposite hands. Bottom of shade should be at eye level.

Bulbs—For 2-socket, base-up type, use total of 120 to 200 watts, preferably white-coated bulbs. For single-socket, base-down type, use 50/150-watt or 150-watt R-40 White Indirect or 50/250-watt; 100/300-watt for senior table lamp with 10″ diffusing bowl.

Shade—8″ top, 10″ depth, 16″ bottom (minimum size) or 14″ top, 13″ depth, 16″ bottom (senior lamp). The shade should be translucent, but heavy enough to prevent "glare" spots through shade; white lining.

Standard floor or double-swing arm lamp



Position—From center of sewing, measure 15″ to left (if person is right-handed), then place center of shade 12″ back from this point.

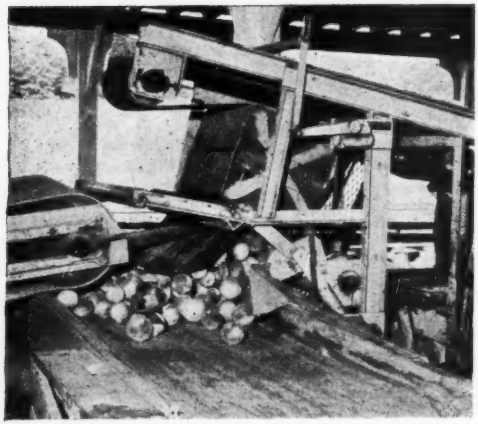
Bulb and Diffuser—Use 8″ or 10″ diffuser that accommodates 50/250-watt or 100/300-watt 3-lite bulb.

Shade—Minimum of 10″ top and 16″ bottom. Shade should be open at the top to give some upward light—white lined.

NOTE: A 75-watt R-30 reflector flood lamp in a photographer's clamp can be temporarily fastened to the lamp stem, below eye level to give "plus" lighting for fine needlework, or sewing on dark material. These reflector lamps get very warm and should not be used for long periods.

CONVEYORS—"Still our biggest labor savers," says Settle. One 70 foot conveyor belt carries fruit from trucks at unloading ramp to beginning of processing line. Another 86 foot conveyor moves packaged peaches from hydro-cooler to refrigerated rail cars.

Simple-looking machines in the packing house help **Speed Peaches To Market**

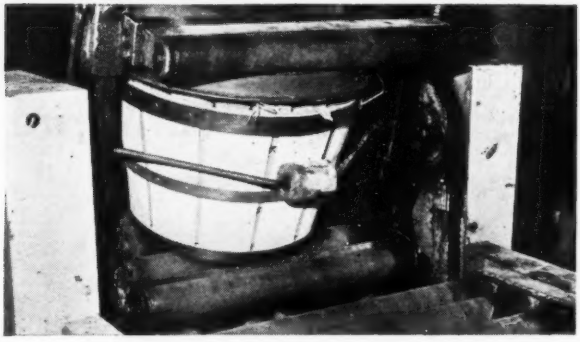


DUMPER—Said to take the place of two men, it turns boxes mechanically, empties fruit and carries empty boxes away. Old system required one man to dump fruit, another to remove empty boxes.

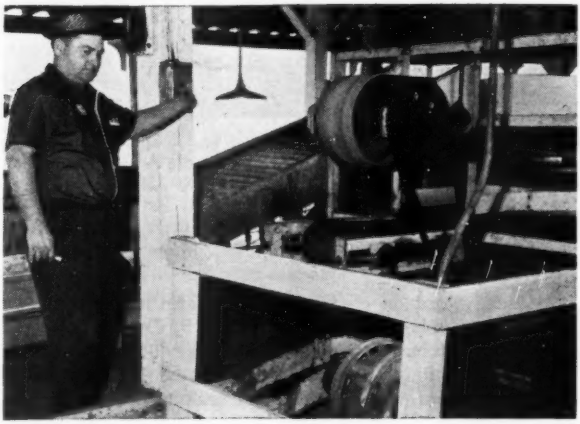
PEACH season is here again and packing sheds are being filled with the new crop. To Jerry Settle, one of the old-timers in South Carolina's peach industry and a partner in the H & J packing house at Gramling, it does not seem too long ago that fruit was packed in the hallway of a big barn. And it took a big effort to fill one rail car a day.

This year he will load a rail car in one hour. Here are some of the simple-looking machines that will save countless man-hours, help make possible rapid handling of the fresh fruit.

BASKET TURNER—When liners are filled with fruit, baskets are placed over them with bottom side up. Machine driven by ¼ hp motor turns the basket . . .



. . . leaves it in upright position, filled with fruit, ringed peaches on top.



PACKING SHED has electric motors and compressors totaling 68 hp. Wiring is in conduit and wooden guard rails have been erected around moving parts to guard against accidents. Motors have individual overload control devices.

KILLS NIGHT FLYING INSECTS BEFORE THEY LAY EGGS

ODOR FREE

HARMLESS TO BIRDS, BEES AND CHILDREN

WORKS 4 HOURS FOR 1c

$39.95

HoL-DeM
electronic
BUG KILLER

Miracle **BLACK-LIGHT** Lamp draws insects from 100 yards in all directions . . . they can't resist its mysterious fascination . . . then whoosh . . . they are trapped in a jet stream that leads straight to mass destruction.

Kills flies, mosquitos, gnats, moths, fruit flies and many crop and livestock pests. WORKS INDOORS OR OUT

Shocks thru weeds

THUNDERBIRD
Electric Fencer

Amazing new high-voltage electric fencer can't be shorted out by weeds, **even when dripping wet . . .** keeps right on shocking as if the weeds weren't there. **$39.95**

Holds stock in dry or rainy weather

Excellent for all fence applications.

Costs only 8¢ per month to operate

Charges all the fence on a section of land

Your HoL-DeM distributor has them.

HoL-DeM *Electric Fencer Co.*
1348 N.E. Quincy, Minneapolis 13, Minn.

see the
MODERN
water system

DEMPSTER

SUBMASTER

- Noiseless
- Greater Capacity
- More Pressure
- Greater Depth
- Economical

Dempster Submaster operates soundlessly at the bottom of your well! Gives you more water, at higher pressure (up to 60 psi) from greater depth. Costs less to install. All parts corrosion and wear resistant. For 4" wells, or larger. See Your DEMPSTER DEALER or write for FREE Folder!

DEMPSTER MILL MFG. CO.
Beatrice, Nebraska

rusty water?

CLEAR IT

Automatically with

DIAMOND

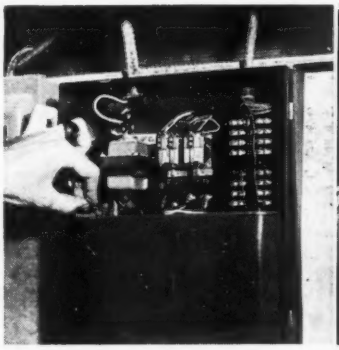
Removes iron particles AND iron in solution. Prevents rust deposits in pipes, rust spots in clothes. ALSO softens water.

FOR INFORMATION WRITE:

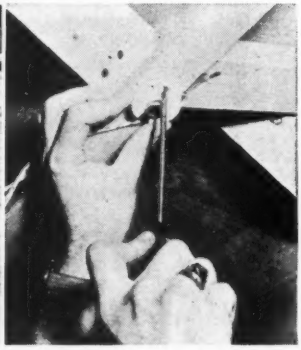
OSHKOSH FILTER & SOFTENER CO.
OSHKOSH, WISCONSIN

Dairy barn on Warren Farm has fire detectors strung along center of ceiling. Note light bulbs guarded by wire-protected glass shields.

Protect against disaster, with Farm Fire



Power supply includes transformer to change house current into low-voltage current that system operates on, and emergency battery that runs system automatically if power fails due to storm or fire.



Installation of fire detectors is easy. Wire is simply stapled to beams, and detectors fastened to ceiling or wall.

"Fire" is a dreaded word on any farm. Fire prevention is, of course, the first step in removing the threat, but prevention itself can never be foolproof.

On the Warren Farm, near Ithaca, New York, no chance has been taken that fire might destroy valuable buildings, equipment and livestock. The 90-cow dairy farm is one of a number owned by Cornell University's College of Agriculture, and operated for experimental and training work.

The farmstead is equipped with a relatively inexpensive fire detection and alarm system that signals on a main panel the exact location of any fire

Indicator panel shows exact location of fire. Buttons test each circuit.

Detection System

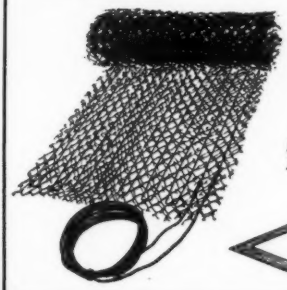
that might break out in a farm building. This permits fast fire-fighting and increases the odds against major damage.

The system essentially consists of four parts—detectors, indicator panel, power supply, and alarm signal. The detectors, similar to electric thermostats, are located in all buildings, and are connected by low-voltage wire to the indicator panel. One detector is required for each 400 square feet of building area.

The panel is, in turn, connected to both the alarm and the power supply, which transforms 115-volt house current into low-voltage current for the system. Should power fail, due to storm or fire, a battery at the power supply automatically takes over to keep the system operative. When power is restored, the unit automatically switches back to house-current operation.

Here's what would happen if a fire should start in any building on the Warren Farm. The detector nearest the fire would immediately sense it and close a circuit. This would instantly sound a large alarm bell or siren, and also light a lamp on the panel, showing the location of the fire. The farmer could be on the scene immediately, and have the fire under control before it gains headway.

With investments in farm housing, equipment, and livestock increasing every day, the need for adequate fire protection is becoming more and more evident. An adequate fire detection system is an investment in disaster protection that should seriously be considered, especially by operators who have numerous outbuildings scattered around the farmstead.



SNO-PAD

Melts Snow and Ice—Electrically
In driveways, sidewalks and steps
Heats concrete in chicken brooding and pig farrowing areas.

Heavy Duty Plastic Mesh—
no metal—26 sizes—High Wattage—
50 w. per sq. ft. for extreme conditions.
Medium 35w—Low 15w for feeding and finishing farrowing pens.

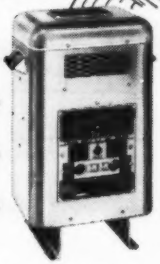
Write for Free Actual Sample!

Raehco
Radiant Electric Heat Company
Centerville, Iowa

Save Money By Doing Your Own Repair and Fabrication Work!

EMERSON ELECTRIC
Portable 180C

WELDS
CUTS
BRAZES
SOLDERS



The Emerson Electric Portable 180C delivers maximum amperage for any of 6 welding heats up to 180 amps. Can be used with twin carbon arc torch . . . all types of AC rods 3/64" to 5/16". Easily portable . . . weighs only 68 lbs.

Write today for prices and receive FREE WELDING SELECTOR GUIDE . . . gives the working data you need in seconds.

EMERSON ELECTRIC *of St. Louis • Since 1890*
8100 Florissant • St. Louis 36, Missouri

Now KILL Flying INSECTS ELECTRICALLY — NO SPRAY NO POISONS . . . NO ODOR day in—day out...YEAR after YEAR

BUG-SNUFFER No. B-20

Attracts and kills pesky night-flying bugs that swarm through screens. SILENT and SAFE . . . no moving parts. Spun aluminum collector cone easily emptied. Stands or hangs. 7½" high. Plugs into household outlet. Only $14.95 postpaid (complete with bulb).

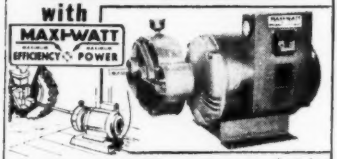
BUG-SHOK No. FT-400

A 24-hour fly and bug killer . . . works for pennies per week. Absolutely CLEAN and SAFE . . . no harmful human shock. Bugs cannot become immune to electricity. 13" high. Plug in and use wherever insects bother. Only $39.95 postpaid (does not include bulb).

Ideal for
FARM HOMES
DAIRIES
MILK HOUSES
and BARNS
FREE BROCHURE

ORDER NOW • **GARDNER MANUFACTURING CO., Dept. EF, Horicon, Wis.**
Manufacturers of electric insect controls since 1942

WINCO® POWER INSURANCE
TRACTOR GENERATOR
with
MAXI-WATT



Provides dependable emergency electric power for lights, heat, refrigeration, milk cooler, and water system. New WINCO 12 KW PTO with MAXI-WATT gives Extra Power, Performance, and Value! Belted tractor model and complete line of tractor and engine generators from 1500 to 10,000 watt. For complete information Write Dept. EF-661.

WINCHARGER CORP.
Subsidiary of Zenith Radio Corp.
SIOUX CITY 2, IOWA

get details on the...
WRITE FOR FREE PICTURES & PLANS
Silo-Matic®
UNLOADER and HOW TO FEED MECHANICALLY
SAVE TIME & LABOR
MAKE MONEY
Dept. E
Van Dusen & Co., Inc., Wayzata, Minn.

How to Efficiently Add Molasses To Feed

Rate of molasses flow is governed by valve. Staten adds up to 20 lbs. per hundred of feed without difficulty.

Here are three ways that dairyman Jack Staten, of Valdosta, Georgia, has benefited from the installation of a molasses blender:

1. Feed processing for 200 dairy cows and additional beef animals now is an entirely on-farm operation.

2. He can put more molasses into finished feed. His blender will add up to 20 lbs. per hundred without difficulty. Consequently, he now adds 300 lbs. of molasses per ton, where in his old system he was limited to about 90 lbs.

3. Cost of getting molasses into the ration is sharply reduced.

The blender is located in the overall processing system so that feed is augered into it from the 1-ton batch mixer. Thus, no extra labor and very little more time is required for this step.

Previously, Staten trucked coastal bermuda hay to a commercial feed mill, had it ground and molasses added at a cost of about $20 per ton. Although 15 lbs. of molasses were blended with each 100 lbs. of hay, the mixing of this with other ingredients produced a finished ration with just 90 lbs. per ton.

Now that he can add as much molasses as he desires, Staten has settled on about 300 lbs. to a ton of feed. The molasses keeps down dust, adds protein, makes the feed more palatable.

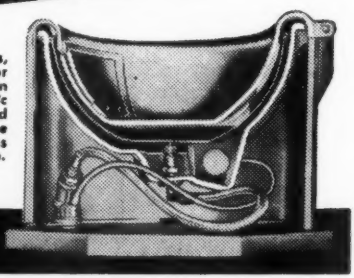
With 6000 gallons storage capacity, he can buy molasses in tank truck amounts, thereby getting a more favorable price. A 5 hp pump delivers the molasses to the blender, which is driven by a 7½ hp motor. Simple adjustment of a valve control governs rate of flow. If too much molasses is allowed to get into the blender, it must be stopped and cleaned, a job that Staten says can be accomplished quickly. □□

For All Livestock!
NELSON WATER BOWL

the ultimate in year 'round watering!

ONLY one moving part—no floats, levers, or springs to jam because of rust or corrosion. Provides clean, fresh water in summer; warms water in winter for 2c a day because thermostatically controlled electric heating element heats a mere bowlful instead of a tankful. Stainless steel and aluminum alloy construction. Completely automatic. Safe!

See your dealer or write



NELSON MFG. CO.
P. O. Box 616 Cedar Rapids, Ia.

Research Notes

By J. P. SCHAENZER

Cumulative pounds of feed required weekly to produce 1 lb. of live weight of broiler is as follows: week 1—0.7 lbs., 2—1.19, 3—1.43, 4—1.55, 5—1.68, 6—1.80, 7—1.94, 8—2.09, 9—2.20, and week 10—2.32 lbs.—UNIV. OF NEW HAMPSHIRE, REED AND SKOGLUND

A roofed-over holding area for unmilked dairy cows should cover a minimum space of two times the number of milking stalls in the milking parlor times 25 sq. ft. per cow.—UNIV. OF WISCONSIN, E. G. BRUNS

Hardware - cloth - lined ear corn cribs have proven successful for storage of dry shelled corn from harvest to the next summer.—UNIV. OF ILLINOIS, J. O. CURTIS

Hardwood sawdust smoke imparted a pleasant flavor to 2-lb. bar-shaped pieces of cheddar cheese smoked from 4 to 6 hours.—UNIV. OF MICHIGAN, HEDRICK, BRATZLER AND TROUT

Years ago, fine New York hotels served more "Maryland" turkey than ever left the Free State. Baltimore hotels at the same time featured "Vermont" turkey.—USDA, AMS

From a study of 138 dairy farms, net income over cash cost varied from $48 for 3000-lb. producing cows to $257 for those producing 8000 lbs. or more milk per year.—LOUISIANA STATE UNIV., WIEGMANN, ANDERSON AND J. JOHNSTON

Lettuce stored at 32° was still as good after 6 weeks as it was after 2 weeks at 45°. —USDA

Irrigation may increase the carrying capacity of steers on pasture by 35% to 50% during the dry summer months.—VIRGINIA POLYTECHNIC INSTITUTE

The size of motor required for conveying 56.5 lbs. of wheat per bushel through 10 ft. of horizontal auger is about ¼ hp at 300 rpm, but about ½ hp at 1000 rpm.—UNIV. OF KENTUCKY, JOE M. BUNN

Vegetable diseases carried by the seeds can be controlled by placing them in a newly-developed electrically-heated water bath at 122° for 18 to 25 minutes, depending on kind of seed, then water-cooling and drying electrically.—UNIV. OF FLORIDA, HARRISON AND MARVEL

Hatching eggs should be held between 50° and 60° to secure excellent hatches.
—UNIV. OF MISSOURI, FUNK AND FORWARD

Sprinkler irrigation labor reported by 132 farmers averaged 1.7 man-hours for corn per acre for one irrigation, 1.5 for milo and 1.2 for milo and wheat.—UNIV. OF NEBRASKA

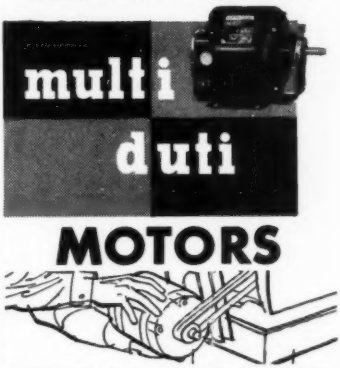
USED MOISTURE TESTERS
Factory reconditioned used Model S Steinlite Moisture Testers. Limited quantity. While they last. Price $95. Write for circular.
Burrows Equipment Company
1316-EL Sherman Ave. Evanston, Ill.

Thriftchanger
gives you FREE HOT WATER from your BULK MILK COOLER
For Complete Details Write:
Sturges Heat Recovery, Inc.
Stone Ridge, New York

Heiman's BROWN LEGHORNS
English White Leghorns. Buff Minorcas. Write for Big FREE Catalog.
Pullets 13.99 per 100 — St. Run 7.99 per 100
Heiman Hatchery, Box 128-BE, Montrose, Mo.

Giant Type ANCONAS
Brown Leghorns and Black Minorcas
Great layers of large white eggs. Eob. FREE Catalog.
St. Run $6.95. Pullets..... $14.85
RICE HATCHERY, Box 111-AE, Clinton, Mo.

Give Your Farm Tools New Life with EMERSON ELECTRIC



There's an Emerson Electric Multi-Duti Motor for every farm application . . . from milking machines to power tools. They're precision built and fully guaranteed by America's leading manufacturer of motors for farm, home and industry.
Write today for catalog and prices and receive FREE MOTOR SELECTOR GUIDE . . . tells you the right motor for your particular needs!
EMERSON ELECTRIC *of St. Louis • Since 1890*
8100 Florissant • St. Louis 36, Missouri

NEW
CHROMALOX Electric Concrete Heater
Warms brooder floors .... keeps snow and ice off sidewalks, steps, driveways
Just unroll the mat in form before pouring top layer of concrete. Size 6′ x 18″ and 10′ x 18″ mats may be connected end-to-end or side-by-side.
Six ft. length only $19.95, ten ft. length $21.95. Operating cost is amazingly low, for any application.
Write for folder and name of distributor.
91871
Edwin L. Wiegand Company
7580 Thomas Boulevard, Pittsburgh 8, Pa.

Advertisers

in this issue . . .

Southeast Edition

Burrows Equipment Co. 33
Columbiana Pump Co. 25
Cuno Engineering Corp. 34
Decatur Pump Co. 14
Dempster Mill Mfg. Co. 30
Duncan Products, Inc. 18
Easy-Heat, Inc. 19
Emerson Electric of St. Louis 31, 33
Everpure Inc. 24
Fairbanks, Morse & Co.
.....Inside Front Cover, 3
Gardner Mfg. Co. 31
Gardenhour Mfg. Co. 24
Goulds Pumps, Inc. 17
Heiman Hatchery 33
Hal-Dom Electric Fencer Co. 29
Insect Electrocutor Co. 18
Kelvinator Div.,
American Motors Corp. 4
Labawco Pumps 24
Marquette Mfg. Co. 9
Monarch Range Co. 25
F. E. Myers & Bro. Co.
Inside Back Cover
Nelson Mfg. Co. 32
Oshkosh Filter & Softener Co. 30
Oxboro Heath Co. 24
Radiant Electric Heat Co. 31
Rice Hatchery 33
Sturges Heat Recovery, Inc. 33
Tait Mfg. Co. 19
Van Dusen & Co. 32
Edwin L. Wiegand Co. 33
Wincharger Corp. 32

CLEAN, CLEAR WATER SIMPLIFIES HOUSEWORK!

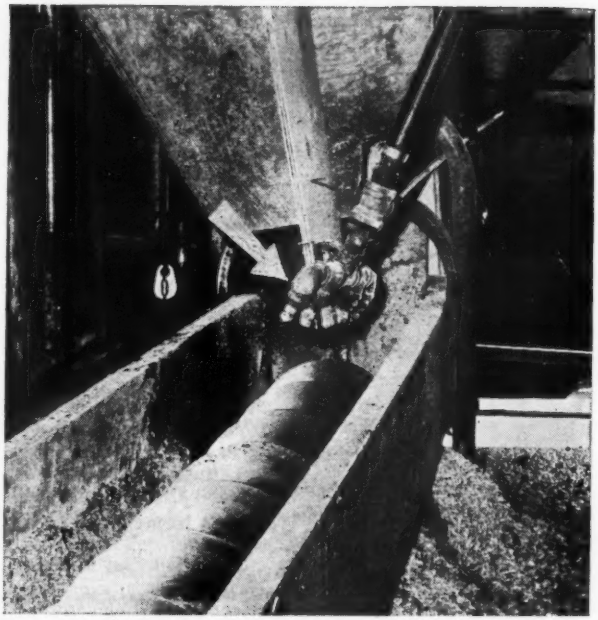
Aqua-Pure removes rust, iron, dirt, sand and algae from your tap water.

AQUA-PURE®
WATER FILTER

Only **$29.95** Includes extra cartridge

See your Hardware, Plumbing Supply, or Water Systems Dealer, or mail check or money order for $29.95 to us. Sorry, no C.O.D.'s.

THE CUNO ENGINEERING CORPORATION
SUBSIDIARY OF
AMERICAN MACHINE & FOUNDRY CO.
84 SOUTH VINE ST., MERIDEN, CONNECTICUT



Water is sprayed from four ¼-inch outlets (arrow) onto dry ration as it comes into feed bunk. Adding water makes ration more palatable, increases consumption and ingestion rate, eliminates dust. 5 hp motor drives 9-inch feeder auger.

Moistened Feed Beefs-Up Dairy Cows' Appetites

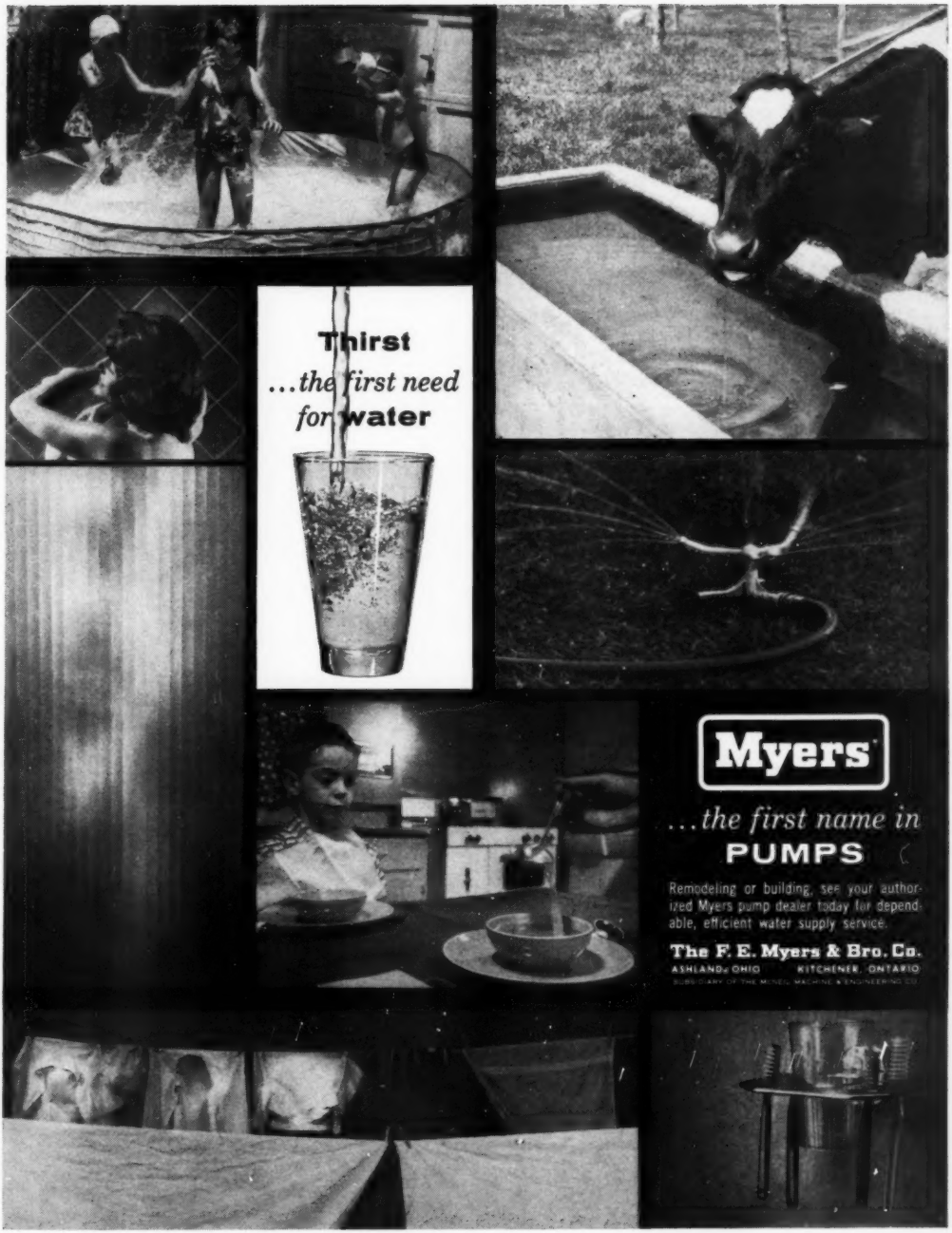
Cows at Jeff Co Dairy near Okeechobee, Florida, are fed a dry ration mixed from beet and citrus pulps, hominy, cottonseed hulls, mineral and dairy-cut alfalfa hay. It is delivered to them mechanically in a feed bunk.

To prevent dust and waste and to increase palatability of this feed, water is sprayed on the ration as it comes into the bunk. Four ¼ inch outlets fixed directly above the 9-inch auger deliver the water.

Bruce Curry, one of four partners in the 430-cow dairy, says that wetting the feed increases the ingestion rate and total consumption. Both are important factors. Cows have access to the manger for about 30 minutes. The 81-foot bunk serves the entire herd, handles 5 tons of feed daily.

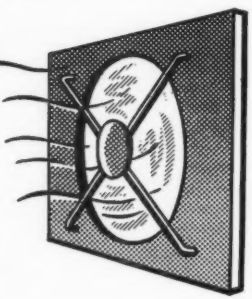
Citrus pulp, which makes up about 40% of the ration, is bought and handled in bulk. Other ingredients have to be dumped from bags into the 2½ ton mixing bin. From that point, the handling and feeding is automated. Feed is augered out of the mixing area into a 10-ton, V-shaped plywood holding bin. Another auger in the bottom of the bin completes delivery to the bunk.

The 9-inch auger in the bunk is identical to ones used for silage. It is operated by a 5 hp motor. While the feed normally is mixed every day, storage capacity is sufficient to allow mixing on alternate days. □ □


Thirst
...the first need
for water
Myers
...the first name in
PUMPS
Remodeling or building, see your author-
ized Myers pump dealer today for depend-
able, efficient water supply service.
The F. E. Myers & Bro. Co.
ASHLAND, OHIO
KITCHENER, ONTARIO

DR H N YOUNG - HEAD
VA AGRI EXPERIMENT STA
BLACKSBURG VA
259-SC

Ventilation Insures Flock Profits



No self-respecting hen can produce eggs profitably in a hot, damp, smelly poultry house. In fact, continued temperatures of over 80°, ammonia gases and wet litter diseases make them so disgusted with it all that they just roll over with heat prostration and croak.

There are other problems, too. Like dirty unmarketable eggs and dry-rot from damp walls.

Reddy says this is no way to treat a lady—even a feathered one. So why not take the summer sag out of poultry profits now — install an Electric Forced-air Ventilation System. It's simple!

FARM BETTER ELECTRICALLY

Appalachian Power Company

We send you this magazine with the hope that it will show you new ways to enjoy the profits and pleasures of dependable, low-cost electricity.